THE BRICKBVILDER

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THE BRICKBUILDER.

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Advertisers are classified and arranged in the following order:—

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Advertisements will be printed on cover pages only.

COMPETITION: ANNOUNCEMENT.

IT was intended to give in THE BRICKBUILDER for this month the detailed programme of the competition, for which cash prizes amounting to $800 are to be offered, but owing to the fact that all the necessary details have not been completed, the announcement will be deferred until the May or June issue.

HOSPITAL SURROUNDINGS.

IN our endeavors to eliminate all lurking places for disease germs and to introduce to every corner floods of health-giving sunlight, it is to be questioned whether we have not ignored a very essential feature of hospital planning, namely, the element of beauty in setting, surrounding and finish. The ideal hospital is by some assumed to be absolutely plain, without adornment of any sort, and hopelessly bare and uninteresting except for a few very carefully framed pictures on the wall of the wards, and cut flowers, which fortunately are never quite banished. There seems, however, to be no good reason why a hospital should not be one of the most beautiful of buildings. If there is ever a time when a human being needs just the right kind of surroundings, it is when his nerves are unstrung and his system all awry. To cure a man it is not enough merely to give him good care and good medicine; the æsthetic element in many human beings is one which cannot safely be denied, and the dreary monotony of some of the hospitals, which pass as being among the best, is, we have no doubt, often responsible for slowness in recovery if not actual relapse. A building committee usually feels that it has accomplished its whole duty when it has built a hospital so severely plain that it makes one ache to look at it, but if we would design the structure so as to be at once absolutely sanitary in all details as well as truly beautiful, there is no question but that it would have far more beneficial effect on the residents than one which was merely hygienic.

This statement applies not merely to the architecture of the building and the adornment of the interior, but in an even larger degree to the exterior setting, the surroundings, the planting, in fact to the landscape work as a whole. Any one who has visited some of the charming old missions in Southern California need not be told what delightful places they are for sick people, embowered in roses, with a riot of nature all around, informal but thoroughly delightful. These old buildings may not be in accordance with the doctor's dictum, but they certainly will do what sometimes the doctor cannot accomplish, infuse in the sinking patient a love for life and for the beauties of nature which will arouse his powers and enable him to stem the ebbing tide. We can at this moment recall only a single hospital in this country in which landscape architecture is treated as an essential element of the exterior design, and yet the beneficial effect of a proper setting we are sure can hardly be overestimated. And it is hoped that as we have now pretty clearly found out how to cope with germs, how to avoid and destroy them, the energies of the hospital architects of the future may be allowed to expand in the direction of more appropriate setting, more beautiful adornment, and that the ideal hospital of the future may be a building the farthest removed from the stiff, formal and often repellent structure to which we are now obliged to consign the sick.

THE MACMILLAN COMPANY has published Vol. I, No. 2, of the Memoirs of Art and Archæology of the Brooklyn Institute Museum. This Memoir is by Mr. William H. Goodyear, Yale '67, Curator of Fine Arts, Brooklyn Museum, and relates to those architectural refinements of St. Mark's at Venice of which he has been the discoverer.

The American Hotel. III.

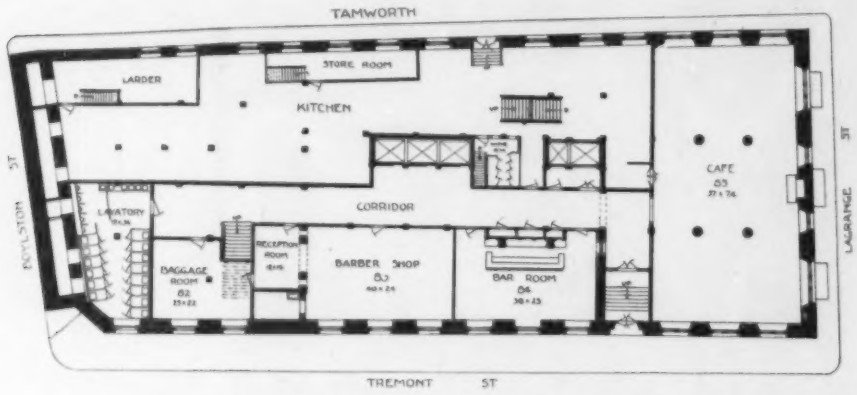
BY C. H. BLACKALL.

THE BASEMENT.

JUST as the key of the arrangement of the first floor of a hotel is liberal, easy circulation for the guests, so the key of the arrangement of the basement is liberal, direct and easy facilities for transportation of supplies, from their reception at the service entrance, through the storerooms, kitchens and serving rooms, to the door of the dining room. The ideal arrangement is one in which all supplies are brought in at one point, where they are received and checked by a special clerk, assigned to storerooms which are near at hand, these storerooms being in turn close by the cooks' headquarters, while on the other side of the kitchen begin the service departments, so that there is no occasion for those employed in the preparation of food on the one side to mingle or interfere with the waiters who deliver the finished products. The part of the architect in planning this portion of the hotel is limited to the providing of sufficient area to approximately accommodate what is likely to be needed in connection with the kitchens and dependencies. The exact subdivision of the space, the placing of the different appliances, are usually intrusted to one of the firms of contractors who make a specialty of fitting hotels and who are far better able to judge of the needs and how to met them than is the case with an architect in ordinary practice. The architect should, however, be perfectly familiar with the problem in a general way so that he may intelligently plan and provide space for the work of the specialist.

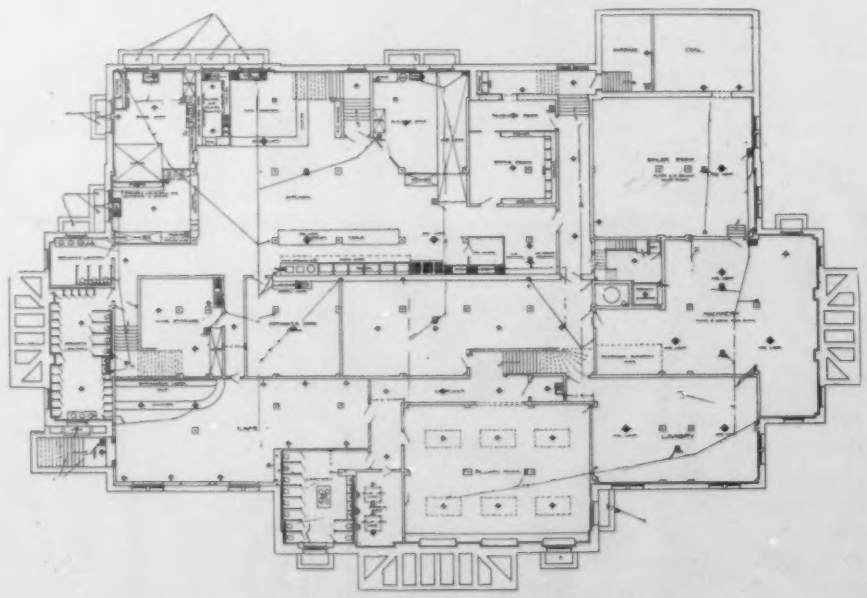
It will be seen by an inspection of the plans accompanying this article that in most of the large hotels, with the exception of such relatively restricted areas as are devoted to cafés, billiard rooms or barber shops, the whole basement is given up to the kitchens, storerooms, etc. Very rarely is too much space allotted for such purposes. The writer has found only one hotel thus far in which the kitchens were considered too large. Very often they are too small.

As a rough approximate rule it may be said that the area of the kitchen and dependencies should be equal in square feet to ten times the number of sleeping rooms in the hotel. That is to say a three hundred room hotel would require a total area for kitchens, etc., of about three thousand feet. Like all rules of this kind, however, such approximation should be used with great care, as conditions often make it impossible to gauge the size of a kitchen by the number of rooms in a hotel. For example, the Adams House in Boston has a kitchen proportioned about in accordance with the foregoing rule, but the number of guests fed daily will vary sometimes over one hundred per cent, and the kitchen seems neither too large nor too small for any occasion. In some respects a better rule to follow is to make the arrangement of ranges, steam kettles and serving tables as compact as possible and then give the balance of all the room that can be spared to the storerooms, refrigerators, wine rooms, etc. By making the actual cooking space restricted, a considerable gain can be had in time of service, and anything which reduces the distance in feet from the cooks' table to the dining room means quicker and better service. The writer has been repeatedly told by hotel stewards that the lack of space was chiefly in storage. With more ample space for storage, supplies could be purchased in larger quantities and would be more readily available when wanted.



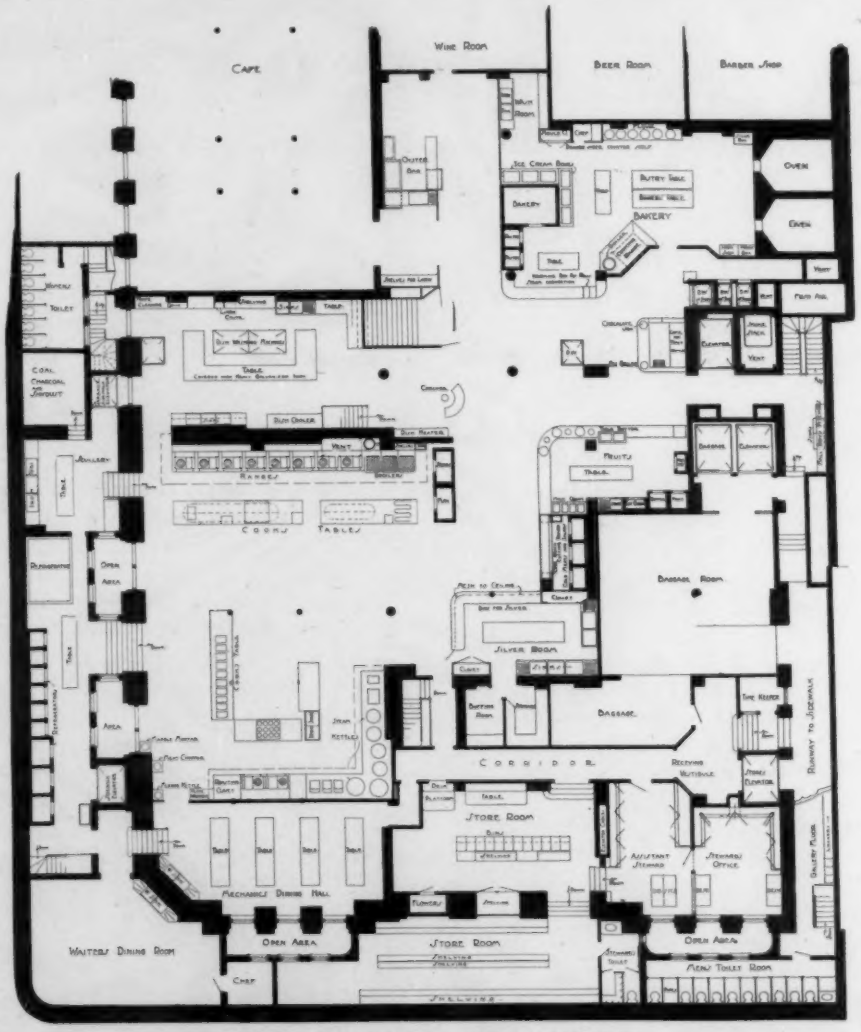
BASEMENT PLAN, HOTEL TOURAINE, BOSTON.
Winslow & Wetherell, Architects.

On a small scale the plan of the Saint Paul School



BASEMENT PLAN, HOTEL SCHENLEY, PITTSBURG, PA.
Rutan & Russell, Architects.

kitchens, for which the writer is indebted to Mr. E. L. Morandi, engineer with the Smith & Anthony Company, shows in very practical form the essentials which are common to all hotel kitchens. The produce is brought in through the entrance adjoining the refrigerators, perishable goods are put on ice at once, and others are sent down to the storage cellar. The refrigerators are immediately adjacent to the kitchen. The range, the broiler, the kettles and the steamers occupy the length of one wall. In front is arranged the cooks' table, which has at one end a compartment in which dishes can be kept in hot water, the rest of the table being kept warm and used for trimming, cutting, etc. This relative arrangement of ranges and cooks' table is one usually followed. The hot water bath goes specifically by the name of Bain Marie. The pastry room is distinct from the kitchen, and both communicate directly with the serving room. In the latter are arranged the steam coffee urns, the cases containing ice cream packed in freezers, and the dish-washing appliances, while in the center of the room is a steam table containing compartments for the roasts and vegetables.



BASEMENT PLAN SHOWING KITCHEN ARRANGEMENT

HOTEL MANHATTAN, NEW YORK CITY.
H. J. Hardenbergh, Architect.

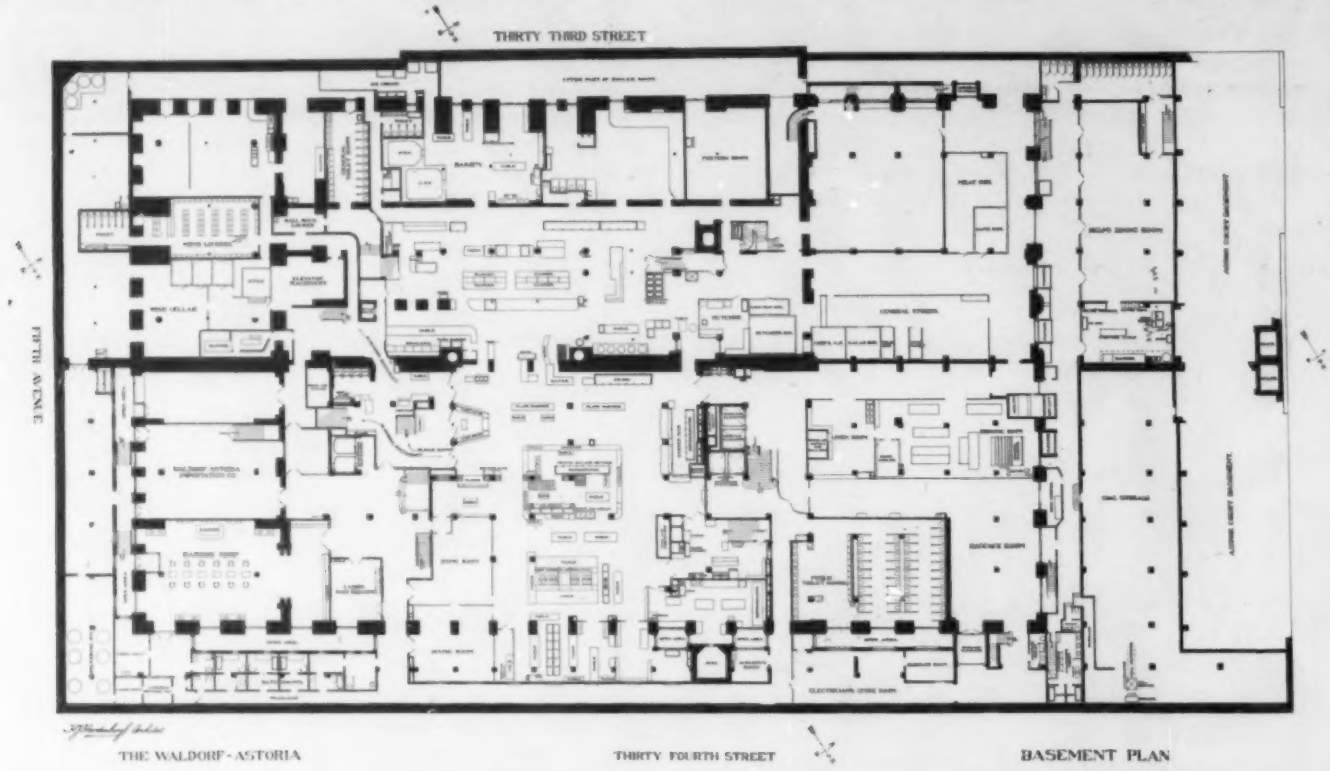
The arrangement of the kitchen in the Hotel Schenley is very carefully studied. Supplies are brought into the compartment marked receiving room. Beyond is a storeroom for canned goods, etc., adjoining which is the butcher shop, with an ample ice chest. Directly opposite the entrance to the butcher shop are disposed the ranges and the cooks' table. The waiters ascend to the upper story by the stairway on the extreme left leading to an upper serving room. The spaces for chopped ice, tea and coffee, etc., are at the foot of the stairs, in the corner beyond is the bake shop, while the dish-washing and storage rooms are reached without passing by the front of the ranges. This is a very compact arrangement, which reduces the time of serving to a minimum.

The arrangement of the kitchens in the Hotel Touraine is such as cannot readily be shown by a single plan. The servants' quarters in this hotel are in a building across the passage in the rear, this building connecting underground through the basement and sub-basement. Supplies are received in the first story of this building and thence distributed to the storerooms in the basement and sub-basement. The ranges and the cooks' table are along the wall separating the kitchen from the corridor beyond the elevators. The bakery, pastry room and ice cream room are in the annex. With the exception of such portions as are used for machinery, the whole of the sub-basement appears to be devoted to wine room, storage and servants' dining room. The waiters serve the basement café directly from the kitchen and serve the first-story dining room up the flight of stairs.

The kitchens of the Manhattan are located in the rear of the basement. The service is up and down by way of the stairs adjoining the café. At the small curved counter near the foot of the stairs the orders are checked. The three-sided table opposite the ranges is for vegetables and roasts. Opposite these, against the partition work, is the range for the roasts, and in the angle are the soup kettles, etc. The other details will be readily understood by an inspection of the plan.

The basement floor plan of the Waldorf-Astoria shows what is probably one of the largest kitchens in the country. There is so much to it that it requires considerable study to make the arrangement seem quite clear. The supplies are brought into the building through a passage

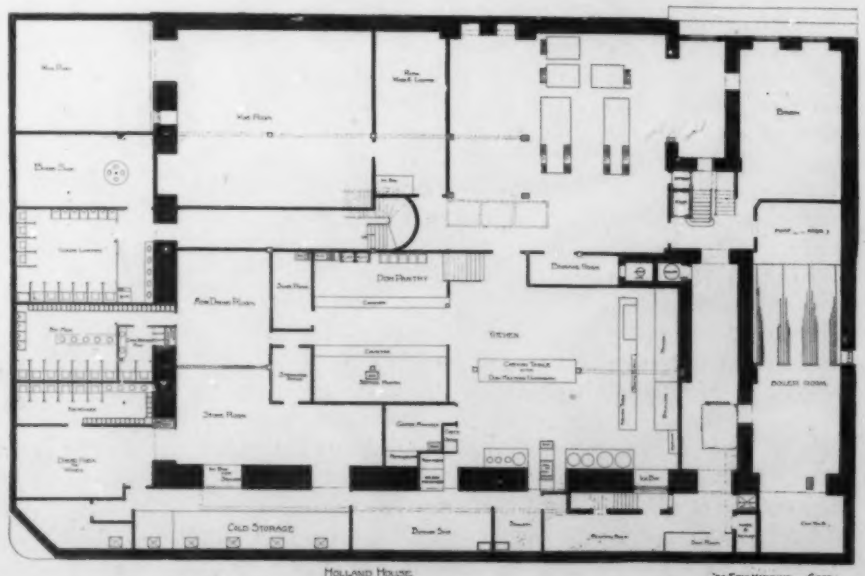
from the rear opposite Fifth Avenue, storerooms being immediately adjacent to this portion. The cooking room is under the center of the Waldorf, with the bakery adjoining on the side towards Thirty-third Street,



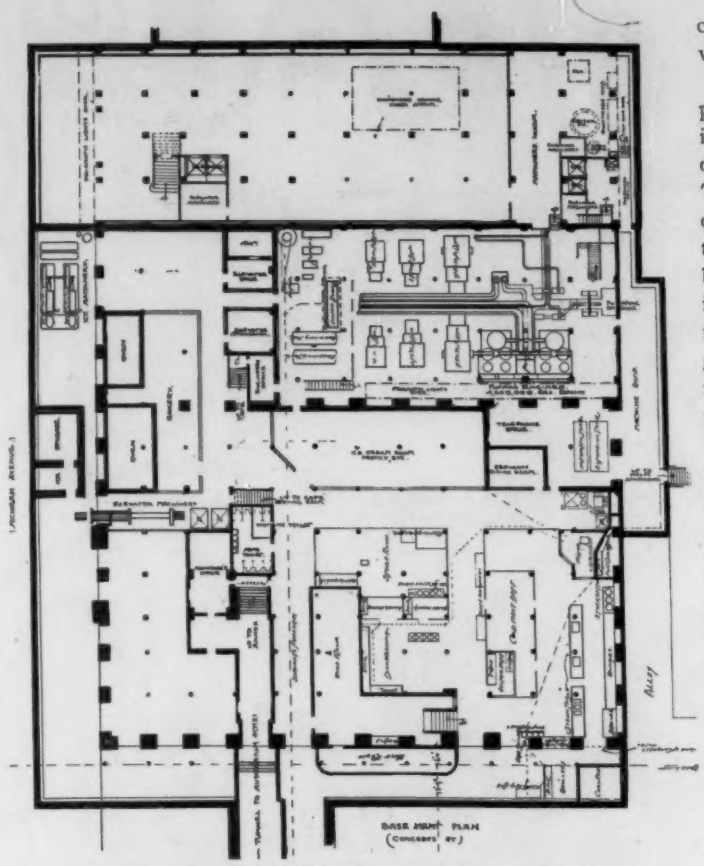
THE WALDORF-ASTORIA BASEMENT PLAN

and the butcher shop towards the rear away from Fifth Avenue. The ranges are in the center of the kitchen, a disposition which is not often met with. The broilers are distinct from the ranges, being against the division wall between the Waldorf and the Astoria on the side towards Fifth Avenue, while the vegetable and the soup kettles are on the opposite side of the room against the same wall. Under the Astoria in the central space are arranged the ice creams, fruits and salads and butter and egg departments, beyond which, towards Thirty-fourth Street, is the dish-washing apparatus. All of the serving is through the sets of doors each side of the checking counters. Arrows on the plan indicate the direction the waiters follow in serving the different portions of the building.

The kitchen and immediate dependencies are of course the principal feature of the basement, but there is considerable other accommodation required in a large hotel. There should be a dining room for the help, and in some of the larger hotels separate dining rooms are arranged for the men and women. A dining room 20 x 30 would answer for help for anything except the very largest hotels, as the servants never all eat at once. Then there should be ample locker rooms for the help, sufficient to give in a general way a third as many lockers as there are sleeping rooms in the hotel. Lavatories and conveniences of this sort of course have to be proportioned in size to the building. There should be a room for the head steward, and in a large hotel it is customary to provide one for an assistant steward, in addition to which the chef requires a room for himself, each of these rooms being of about 150 square feet area. Space should also be provided for laundry and drying room, together occupying, for a three hundred room hotel, a space about 30 x 50. There are also a host of minor requirements for which no rules can be laid down, as they vary indefinitely according to the circumstances.



HOLLAND HOUSE
PLAN OF BASEMENT



BASEMENT PLAN, AUDITORIUM ANNEX, CHICAGO.
Clinton J. Warren and Holabird & Roche, Associate Architects.

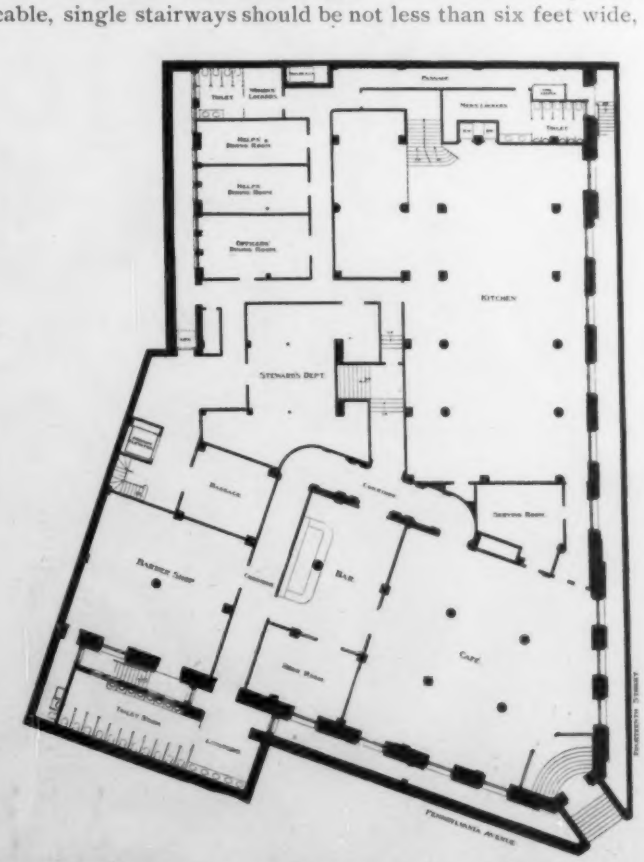
It is usual in a large hotel to provide in the basement for a billiard room with at least three tables, for a barber shop accommodating not less than four chairs, and in addition to the café, to plan for a barroom, which should be arranged so that one can enter at one end and leave at the other, the bar occupying the entire side of the room. An apartment 15 x 24 would be ample for the largest of barrooms. The men's public lavatories for the guests are also usually placed in the basement convenient to the billiard room, to the barroom and to the main stairs leading to first story. The boot-blacking stand with accommodation for not less than four chairs is best placed in an anteroom adjoining the lavatory. It goes without saying that all of these basement rooms should be kept bright and clean in appearance and arrangements made for the most ample and thorough ventilation.

The construction of the walls and partitions about the kitchen, storerooms, etc., is usually of such nature as to admit of being readily and thoroughly cleaned. There is no material which seems to answer so thoroughly for walls in this connection as enameled brick. Thin partitions, where practicable, are often made of heavy wire netting so as to allow of ample ventilation, and where wooden partitions are necessary they are best set up six inches above the floor so as to prevent accumulation of dirt. The kitchen of the Touraine is floored with twelve-inch quarry tiles laid in cement, the floor sloping towards a catch-basin in the center, and the whole kitchen is hosed out once or twice a day. None of the floors anywhere in the basement should be of wood, and where plaster is considered necessary it seems to be the practice to coat it with enamel paint.

There remains yet to be taken into account the steam and power plant and machinery. These constitute a very large item. In the Waldorf-Astoria the entire sub-basement is devoted to these purposes, and there is none too much room. The points to be considered in connection with the planning of boilers and machinery in a hotel are about the same as those which are involved in the construction of any large building, except, however, that in all first-class hotels an ice and refrigerating machine constitutes a very important factor. This, again, is a matter for expert advice, but in a general way it may be said that a hotel with three hundred rooms would require a maximum capacity of about thirty tons of refrigeration per day, which would consume in the vicinity of four hundred horse power hours in steam, and the entire ice plant would require a floor area of about one thousand square feet. If ice is to be made in any great quantities the available floor space should be increased twenty-five per cent.

In devising the electric generating plant for a hotel allowance must be made for a certain amount of power to be used in the kitchens, etc. There are a number of devices, such as ice cream freezers, egg beaters, knife cleaners and sharpeners, which are to advantage operated by small independent motors. For a three hundred room hotel it would be well to allow thirty-five horse power for fans, motors, etc., in connection with the kitchen, including the dumb-waiters.

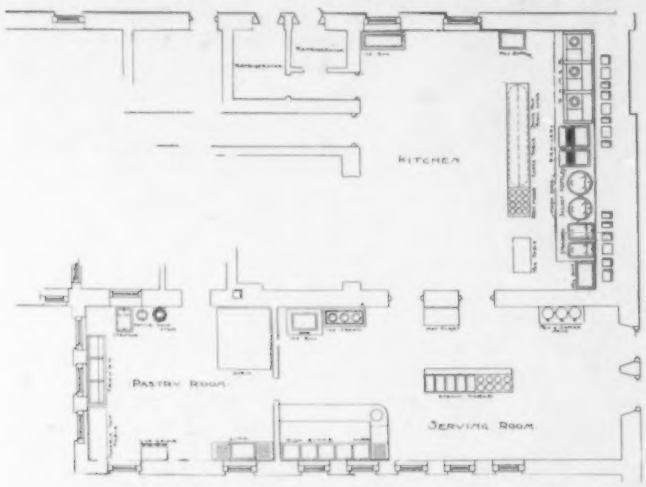
The stairs between the kitchens and the dining room are best arranged in pairs, so that the waiters can ascend on one side and descend on the other. When this is impracticable, single stairways should be not less than six feet wide,



BASEMENT PLAN, NEW WILLARD HOTEL, WASHINGTON.
H. J. Hardenbergh, Architect.

with a strong hand rail down the center. Dumb-waiters are provided to run from the kitchen to the serving room in the floor above, and where practicable from the kitchen through the private serving rooms in each of the sleeping floors. An automatic electric dumb-waiter which can be set so as to stop at any given floor is best adapted for this purpose.

It is a good practice where possible to carry a separate smoke pipe from each range, so as to ensure thorough draught. Where ranges are set in the middle of the kitchen the draught has to be down and across under the floor. The separate smoke pipes from the ranges are



PLAN OF KITCHEN AND ADJOINING ROOMS, ST. PAUL'S SCHOOL, CONCORD, N. H.
Smith & Anthony, Contractors.

sometimes combined in a single vertical shaft, but it is better to carry the pipes up independently above the roof, enclosing them in a large shaft which serves as ventilation exhaust from the kitchen and connects directly to the metal hood enclosing the top of the ranges. For a three hundred room hotel the size of this exhaust duct would be about fifty square feet in area.

The quantity of water which is used so continuously around a hotel has made practicable the utilization of artesian wells sunk within the premises. Many of our largest hotels draw their supply for boilers and for washing from wells and occasionally the well furnishes water of sufficiently excellent quality to be used for drinking as well. This results not only in a great economy, but makes the control of the water system much easier. If an artesian well is to be provided for, the space for pumps would be about fifteen feet square.

In conclusion, it can be said that in a problem so complex as the modern hotel, it would be impossible to lay down any exact rules for planning or arrangement which could be applied indiscriminately. There is no structure with which the architect has to deal that calls for a larger amount of specialized technical knowledge, and the most that can be hoped for these articles is that they have presented the most prominent features of architectural practice as exemplified by the typical American hotels of to-day.

The writer wishes to acknowledge to courtesy of the architects who have given their aid in the loan of plans and the supplying of data regarding the various hotels which have been illustrated.

Interesting Brick and Terra-Cotta Architecture in St. Louis.

MISCELLANEOUS.

BY S. L. SHERER.

IN the previous article reference was made to some of the private houses of St. Louis, but in this continuation mention will be made of those buildings not entirely private and yet not wholly devoted to commercial or in-

ENTRANCE GATE, WASHINGTON TERRACE.
George R. Mann, Architect.

stitutional purposes. Some of these structures, wherein the uses of a doctor's office have been united to those of a private residence, form an interesting class and offer the architect a problem that lends itself to architectural treatment. Generally located on corners, they have the advantage of two street fronts with an entrance on each street.

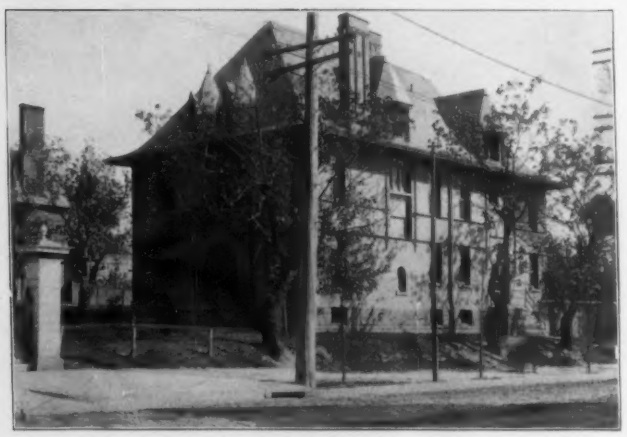
Of this class of semi-private buildings Theo. C. Link's house for Dr. Moore is an original and interesting ex-

PAVILION, FOREST PARK. Eames & Young, Architects.

DOCTORS' OFFICES. E. A. Manny, Architect.

STORE BUILDING. Weber & Groves, Architects.

DR. COMSTOCK'S HOUSE AND OFFICE. W. A. Swasey, Architect.



DR. MOORE'S HOUSE AND OFFICE. T. C. Link, Architect.

OFFICE BUILDING FOR DOCTORS. Eames & Young, Architects.

OFFICE FOR DR. SPENCER. J. L. Wees, Architect.

BRICKWORK IN ST. LOUIS.

ample, marked by extensive use of diapered brickwork which has been made to play an important part in the design, although the dense foliage prevents this being shown in the photograph.

In Dr. Comstock's house W. Albert Swasey was charged with a similar problem, and while the front elevation presents an attractive appearance, the east side is less pleasing, and the whole rendered somewhat lifeless by the immaculate smoothness of the red brickwork.

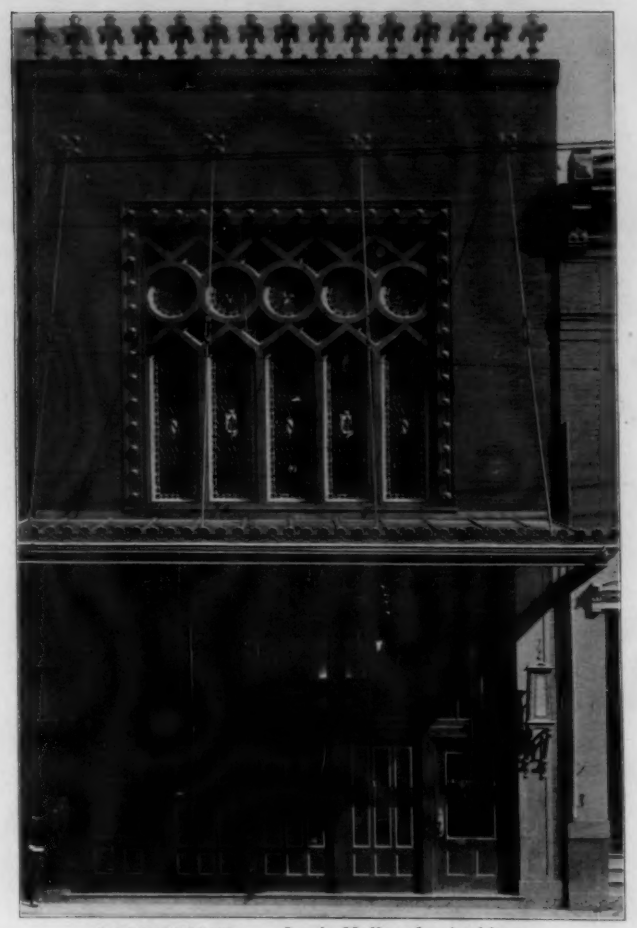
The office of Dr. Spencer, by J. L. Wees, is entirely different from the preceding examples in that it is solely an office building adjoining the private residence. The design shows a clever adherence to those features which are making the modern French school of design such a power in the architectural work of the day. The effect is marred by the introduction of the marble panels in the upper story; nevertheless it is a very interesting design and one that evinces study and knowledge of the style.

LINDELL RAILWAY PAVILION, FOREST PARK. Eames & Young, Architects.

STABLE FOR SIMMONS HARDWARE CO. Weber & Groves, Architects.

The doctors' office building, by E. A. Manny, is a somewhat different development of the same purpose, and withal is a clever design with the terra-cotta ornament well placed.

A still larger and more individual performance is the office building for doctors by Eames & Young, one of



RATHSKELLER. Louis Mullgardt, Architect.

the best and most interesting examples of all brick design in the city. Built in 1887, it remains the best example of its kind, nor does it seem improbable that its indefinable charm will abide a century hence.

Louis Mullgardt's building for the Budweiser Rathskeller is highly individual, as is all of his work, whether it evokes one's admiration or not. For the first time a dark green enameled brick of varying shades has been used and with good effect, exhibiting the architect's love

APARTMENTS. John Stafford White, Architect.

STABLE. Shepley, Rutan & Coolidge, Architects.

of coloring in building. Unfortunately the photograph does not show the interesting staircase hidden by the temporary entrance screen.

The Hotel Horn, by Weber & Groves, is an ambitious attempt in the modern French style that compels attention. It seems unfortunate in the crowding of the cornice over the windows, and the application of a balustrade in front of a blank wall. The walls are of red

APARTMENT. E. A. Manny, Architect.

stock brick laid with close joints of white mortar, the trimmings being of white terra-cotta.

More original and individual in design, the St. Nicholas Hotel possesses all the characteristics that have made the work of Louis H. Sullivan famous the world over. Certainly no more original work, unless we except his masterly Wainwright building, has emanated from his hand. Not the least interesting feature of the building is the band of ornament over the entrance, demonstrating that his detail looks as well in stone as in the more plastic terra-cotta, with which material we naturally associate his design.

The tendency towards life in apartment houses has been marked, but up to this time few of the buildings erected have been characterized by any notable architectural treatment, The desire for a private apartment devoted to a number of bachelors of kindred tastes has given Mr. Manny the opportunity—the first of its kind—to design the Pendennis. It is built of red brick with flashed headers every fourth course and with architraves of white terra-cotta. It is such a house as Major Pendennis himself would have enjoyed, and is a good example of refined and restrained use of the materials employed.

In the Stafford apartment John Stafford White has had recourse to the English Renaissance style for his clever design, which speaks for itself in the regardful manner in which the red brick and white terra-cotta have been combined in a very interesting composition.

The Olive Street store and apartment building, by Weber & Groves, is a well balanced design in a mottled yellow brick with terra-cotta trimmings white in color. It is regrettable that our streets do not show more buildings which evince the same intelligent study and grasp of opportunity.

The English Renaissance has afforded a model for the same architects in the corner store building; less interesting perhaps than their larger building, but a fairly successful attempt to impart some measure of fitness and interest to a problem which is seldom solved in a way that repays a second glance.

A problem generally delegated to the utilitarian engineer has received fitting treatment at the hands of Eames & Young in the two pavilions erected in Forest Park for the street railways. The design of the structures bespeaks their purpose, and a class of building heretofore "viewed with alarm" has been developed in a manner that enhances rather than mars the beauty of the park. The towers and campanile are useful and picturesque features that add interest to the composition, which would naturally appear somewhat flat without them.

ST. NICHOLAS HOTEL. Adler, Sullivan & Ramsey, Architects.

HORN'S HOTEL. Weber & Groves, Architect.

St. Louis is fortunate in possessing many private places wherein the better class of houses are concentrated. These places or parkways are adorned with entrance gates which are usually well designed and add to the attractiveness of the place. While the gateway to Washington Terrace by George R. Mann cannot lay claim to originality — being a copy to some extent of the well-known Tower of the Large Bell in Bordeaux — it possesses interest not only for its picturesque design, but for its brickwork as well.

That the humble purpose of a stable justifies the same thought as a house is evidenced by the Sproule stable designed by Shepley, Rutan & Coolidge, notable for its brickwork as well as for its design. Built of a reddish sand mold brick with horizontal joints of white and vertical joints of red mortar, it presents an appearance as unusual as it is delightful.

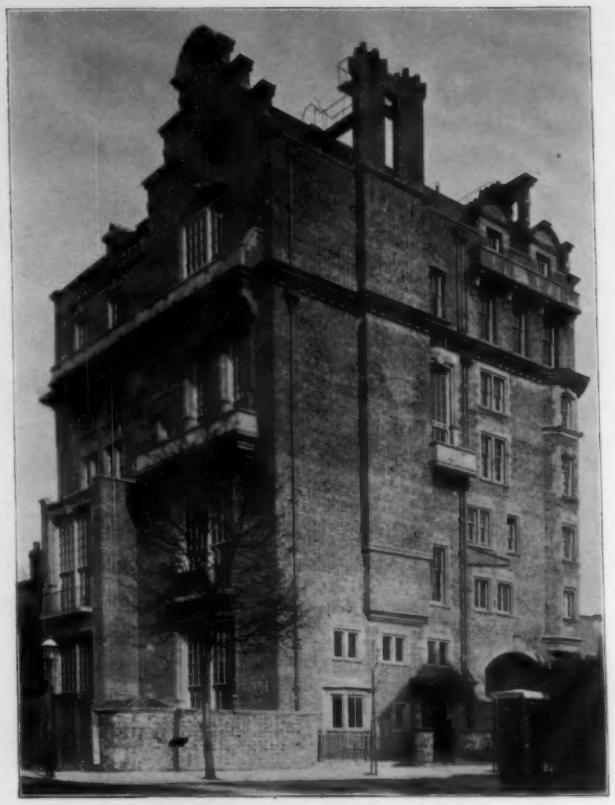
In the stable for Simmons Hardware Company, Weber & Groves have made the most of a larger opportunity and produced a building that not only expresses its function, but one that possesses interest for its clever design and for the character of the brickwork, which is mottled red in color and laid as stretchers with Flemish bond every seventh course.

Architectural and Building Practice in Great Britain.

BY R. RANDAL PHILLIPS.

A COUPLE of months ago, when the frost was keen and building operations were consequently much interfered with, some prominence was given to the idea of mixing sugar with the mortar to prevent it freezing. That is an ingenious, a plausible idea, but practically worthless. Building is stopped in winter because the water in the mortar freezes and disintegrates the crystalline structure essential to its binding. Some years ago experiments were made to ascertain the effect of sugar on Portland cement, and it was found that while a very small percentage retarded its setting, a slight excess utterly spoiled the cement. So that the addition of sugar in making mortar is a very doubtful advantage. The only effective way is to use unslaked lime, the heat generated by which will prevent the mortar freezing for some time.

In previous letters I referred to the bill which was to be introduced to amend the London Building Acts in regard to fire protection. That bill has latterly made its appearance — and also its exit! Highly desirable though it is to render buildings as fireproof as possible and to provide adequate means of escape from them, this bill was altogether too drastic — an impossible bill, prejudicial to the building trade and oppressive to property owners. It met with the entire opposition of the city and has now been withdrawn; but a new bill is to be introduced in the next session of Parliament. When it makes its appearance it will probably be so amended as to receive legal sanction. Two other bills before Parliament are the Plumbers' Registration Bill and the Architects' Registration Bill. The former has passed its first reading in the House of Commons. Though promoted for many years, it has never succeeded in becoming law; yet it is a bill worthy of support, for with proper sanitation, so vitally important to the health of all communities, nobody should be allowed to call himself and work as a plumber unless qualified. The bill aims at enforcing a statutory examination and registration. The Architects' Registration Bill has the same object in view. It also has been before Parliament for many years. The Society of Architects fathers the measure, and as a consequence it has not received the support of the Royal Institute of British Architects, without which it can never hope to be put on the statute book. Formerly the Institute members were utterly opposed to the idea of registration, but of late years they seem to have somewhat modified their views and it is my own belief that they will introduce a registration bill in the not very far distant future.



LANSDOWNE HOUSE. William Flockhart, Architect.

The Engineering Standards Committee has now practically finished its chief labors. Composed of more than two dozen committees, to whom the government contributed fourteen representatives, it has effected one of the most important reforms in the industries of this country by standardizing steel and iron sections; indeed in structural work alone it is estimated that a saving of £750,000 (about $3,700,000) a year will result. Builders and architects are chiefly interested in the H beam, of which thirty sizes are given, varying from 3 inches x 1½ inches to 24 inches x 7½ inches, and weighing respectively from forty to one hundred pounds per foot.

CENTRAL SCHOOLS, OXFORD. Leonard Stokes, Architect.

The Royal Academy — so eminently conservative a body — has decided on a much-needed reform. Since its inception, one hundred and fifty years ago, Academicians and Associates have been entitled to have eight pictures hung and outsiders to submit eight. After this year members will be limited to six and outsiders only allowed to submit two

pictures. At present about one in ten pictures gets hung: more than ten thousand are submitted and the work of selection is enormous; in fact it often amounts to little more than a scramble, in which those amateurs

PRUDENTIAL ASSURANCE COMPANY'S BUILDING.
Alfred Waterhouse, Architects.

who persist in sending their eight pictures every year cherish the hope of getting one squeezed in. So far as the architectural room is concerned, the new rule will not make much change. About two hundred and fifty designs out of probably a thousand are hung; but no photographs on any account, though this is pure folly, as photographs show buildings as they actually are, not as they might be with their worst features softened or hidden by the clever artist's perspective and their best features accentuated to a lying degree. There are not many architects who send in eight frames; but many submit four which have not the slightest chance of being accepted; and it is in regard to these that the new rule will apply most happily for the Hanging Committee and the reputation of English architecture.

Several other matters of current interest have occurred which I may briefly mention.

An association has been formed to promote the adoption of the new model by-laws for rural districts, so urgently needed in place of those dead weights of by-laws which imposed the same fireproof construction on an isolated country house as on city buildings huddled together on every foot of space. Another association has been formed to watch the conditions of competitions and protest against such as they think unjust; while another association is being promoted to further the interests of quantity surveyors. The Architectural Vigilance Society has been formed with the object of influencing public opinion and, if necessary, protesting against public au-

ARCH AND COVERED WAY, PRUDENTIAL ASSURANCE COMPANY'S BUILDING.

thorities who refuse to consider "qualified advice on the æsthetic as well as sensible treatment of public works of art." The committee includes several well-known engineers, architects and artists. A form of contract will, it is anticipated, be agreed upon soon between the Royal Institute and the Institute of Builders, and action has been taken to abolish the objectionable practice on the part of some public bodies and architects who require priced bills of quantities with tenders.

HOTEL, SEACROFT GOLF LINKS. Brewill & Baily, Architects.

The chosen recipient of the Royal Gold Medal (which is awarded annually

to the architect who is considered to have produced the most distinguished work during the preceding year) is Mr. Charles F. McKim of New York. Mr. Richard M. Hunt is the only other American who has been so honored and that was in 1893.

A notable paper on Westminster Cathedral was read by Mr. Charles Hadfield before the Royal Institute of British Architects in March. Mr. Hadfield pointed out that Bentley's chief constructive idea was a great building of brickwork set in cement mortar, covered by homogeneous concrete domes, vaults and flats, with no steel or iron work about it and little wood. "I have disproved," wrote Bentley, "that terrible superstition, that the use of iron is necessary to long spans." It was found by experiment that the best core for the concrete of the domes and for general bearing purposes was clean, hard brick refuse from the brickyards broken to a walnut gauge. Old brickbats and coke-breeze were discarded because they tended to kill or starve the cement. The concrete for the foundations was composed of five parts of Thames ballast and one of sand to one of Portland cement. The brickwork of the footings was double the width of the walls above, the concrete below extending from one foot to two feet outside. More than two million bricks were used in the foundations. For the exterior of the cathedral Bracknell red facing bricks two inches thick were used, wire-cut bricks for the piers, and hard blue bricks for the outside facing of the underground vaults and sacristy, and for the dampcourses, set in nearly neat cement.

"SANDHOUSE." F. W. Troup, Architect.

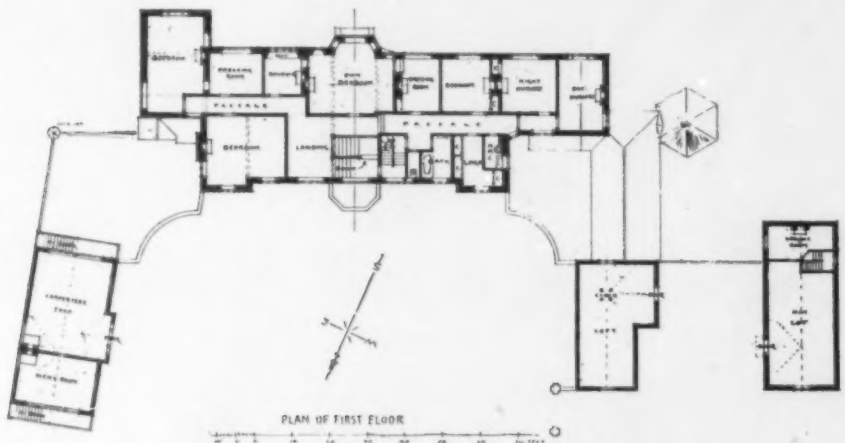
"SANDHOUSE." F. W. Troup, Architect.

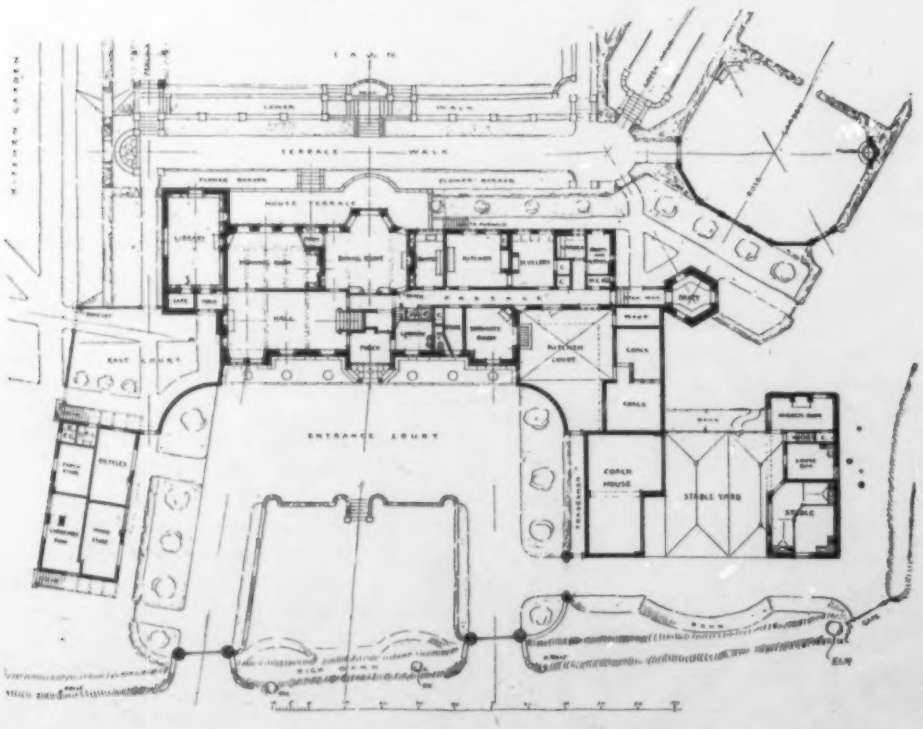
English bond was generally adopted, except for the outer facing, which was bonded to the backing with one course of binders to four of stretchers, without the use of quarter bats. Inside the building stock bricks were employed. The mortar was composed of Portland cement and clean sharp Thames sand, mixed in the proportion of one to three. The courses, averaging four to the foot, were well rubbed in and flushed up as work proceeded, with a good substantial mortar joint throughout. As the result of tests made it was found that the Fletton bricks stood a "slightly cracking stress" of 185.6 tons per square foot, while it is considered that ordinary London stocks would have cracked with one-third the load. The blue bricks resisted pressure up to seven hundred tons per square foot, and are impervious to moisture.

In conclusion I may refer to the accompanying illustrations. "Sandhouse," Witley, Surrey, is built of wood-burnt bricks, and thus most of the headers are vitreous flare-ends of a soft gray color, which have been worked into a diaper over the whole house. The other bricks are red. All the woodwork is in oak. The somewhat unusual south larder has double windows and triple walls, and is supplemented by good cellars and a detached dairy with covered approach, thatched. Mr. F. W. Troup of London is the architect.

The Prudential Assurance Company building forms an immense block. It is of red terra-cotta with a brown granite base. Inside all the walls are covered with glazed brick in light tints or with tiles of very charming pattern. There is a great inner courtyard that gives light and air to the buildings grouped around it. The roofs are covered with green slates. Mr. Alfred Waterhouse, R. A., is the architect.

The Seacroft Golf Links Hotel at Skegness is to be a red brick building up to the first-floor level, above which it will be rough cast, with a wood cornice painted white and the roof covered with hand-made strawberry colored tiles. The accommodation provides not only for an ordinary hotel, but also a small golf club with the necessary dressing rooms, etc. Messrs. Brewill & Baily of Nottingham are the architects.





PLANS, "SANDHOUSE." F. W. Troup, Architect.

The Central Schools at Oxford have recently been completed from the designs of Mr. Leonard Stokes, F. R. I. B. A., and consist of three blocks irregularly disposed on a spacious site and enclosed by a well-designed iron railing. Each building is characterized by reposeful outline and quietness of detail, the architectural effect largely depending on the carefully considered coursing of the two varieties of brick (red and picked yellow stocks) and the carrying up of the angles of the building as flanking piers to the gables.

Lansdowne House, Notting Hill, London, is a block of flats and studios built of yellow stock bricks. Each two-floor suite has a studio the height of both, so that the monotonous repetition of small windows is avoided. The boldly corbeled balconies faced with slabs of Ham Hill stone set on edge and cramped together give a striking aspect to two of the elevations. The architect is Mr. William Flockhart, F. R. I. B. A.

Fireproofing.

The Economics of Construction.

BY JOHN LYMAN FAXON.

ECONOMY — it's a pretty large word, covering a wide field of knowledge; intelligent application; and of considerable import to the investor.

It is also a very much abused word, thousands of errors, both of omission and commission, being perpetrated under the guise of its alluring prospects and its misconceived interpretation.

There are two kinds of economy, so called: (1) in the perverted sense, *extravagance*, in the use of cheap materials and poor work, because of the delusion that money is saved thereby; (2) the exception which proves the rule, *scientific economy;* in the use of the least amount of best materials, and the employment of skilled workmen, to ensure the best results at lowest cost, without waste of materials or labor.

Our relations are with (2). As a simple, concrete example, we will assume a brick pier — load one hundred tons — of general run of stock brick laid in lime and cement mortar, which should have a factor of safety of eight square feet section area; but a pier, for same load, built of selected A 1 hard bricks laid in neat Portland cement, will give a requisite factor of safety with four square feet section area, at a saving of twenty-five per cent in cost.

This is a simple principle of means to ends, yet one which the average owner, also mason, does not seem to comprehend.

We know of a recent case in which an architect was damned in no measured terms as "extravagant and a robber," because of just such application of means to ends, because he specified "Portland cement instead of common cement, which was good enough."

Or take, for instance, a country house; an eight-inch wall of A 1 hard bricks, hards outside and hollow bricks for backing, laid in Portland cement, properly bonded, and the inside face painted with a first-class damp-proof paint, is equal in strength and durability to a twelve-inch wall as ordinarily built, and the cost of the eight-inch wall is about twelve and one-half per cent less than the twelve-inch wall. Economics of construction have to do with all classes of materials — coefficient of strength, availability for use, cost of stock and labor, *common sense* application; it begins on the draughting board and radiates through the structure, the bone and flesh, the nerves and fibers of a building, and ends with the net per cent income.

The main object of this series of papers is the furtherance of a departure from the present system of steel framing to the adoption of solid masonry construction, an enlarged field for burnt clay products, and we contend that solid masonry construction is not only vastly more sensible and enduring, that it is less costly, a more profitable investment; because of its enduring qualities, longer life. The present system of steel framing is a delusion and a snare, not permanent as to stability or life and extravagant as an investment; the "fad" is a good deal like champagne, mighty seductive, but an overdose of it is pretty sure to make one light headed — and even in moderate portions it lacks the flavor of fine red wine. Within reasonable limits, any kind of a building can be erected in solid masonry; by reasonable limits we mean, all public and semi-public buildings, town halls, schools, churches, libraries, hospitals, college buildings, city and county buildings, of whatever area or height, also office buildings, hotels and apartment houses, not exceeding twelve stories in height.

The time is fast approaching when the excessive sky-scraper (an out and out abortion) will be a thing of the past; a time when investors will come to realize that buildings not exceeding eight to ten stories are better dividend payers.

Architectural economics have to do with the art of *planning* as well as the science of construction, for upon the *plan* depends the economy of construction; the plan rules the construction, not the construction the plan, in nine cases out of ten; and to a more or less extent — generally more — the plan is ruled by the client rather than by the architect.

A well-known real estate man recently said, "I know more about the planning and requirements of an office building than any architect in my city." We have seen the plans of a large office building being erected for the said real estate man, and we know that if the plan had been based upon true economics of construction, on a system of *units*, and of solid masonry construction, that the building would cost at least ten per cent less, would last five times as many years, and be a much more profitable investment. We do not believe that the exigencies of modern business, now or in the future, demand excessive spans or unrestricted floor areas. We do believe that life and property should be protected, and that money invested should be wisely spent and lasting as an investment, and not put into a system of construction of exceedingly doubtful stability and durability. We also believe that more buildings, such as residences and public and semi-public structures, should be built *fireproof*, in respect to safety, durability and economy.

At the present time there are three systems of fireproof construction, so called, in general use.

(*a*) *The steel frame*, with burnt clay encasement, is a structural anomaly, fundamentally so; for in this, that element of structure — the frame — which should be the most enduring as to structure, and the most efficient in resistance to fire, is the least enduring as to structure and one of the weakest as to resistance to fire; and besides, *supports* the encasement *which is designed to protect it;* if human ingenuity had set itself the task to devise a system utterly illogical it could not have met with more unvarnished success.

In structural principles this system stands practically where it did at the start, the general elements being, as originally, I beams with flat or segment arches, supported by metal columns, and protected, to a more or less extent, by terra-cotta encasement. In so far as the system, as a system, is concerned, it has had a marvelous development, but along with this have come defects of structure which hardly compensate for other advantages.

In so far as the encasement, *per se*, is concerned, there is not much room for improvement, in that, as a part of this system, when properly provided for and placed; the prime defect, in the majority of cases, being, not in the clay product as a product and protection in itself, but in the *amount* employed, and the *careless* way in which most of it is put in place. This defect is not the fault of the makers of terra-cotta products, for, if architects do not specify an adequate amount of protection and contractors neglect to exercise due and proper care in the setting of the material, no one else is to blame.

It would be undoubtedly quite a step in advance, in so far as this system is concerned, if the makers of the encasement insisted upon setting the material in place; they at least would have concern in its proper installation.

It is the *steel* system, as a system, which does not meet with our approval; and the contention is that the same amount of brains and cost that is now put into steel and its encasement would produce in brick and terra-cotta alone, better results and a higher class of *fireproof* construction.

It cannot be successfully maintained that burnt clay products are less valuable than any other material, either as to structural application, resistance to fire or permeability. The evidence of centuries is unquestionably on the side of burnt clay, and if the producers of burnt clay products will bend their brains and energies to the development of the great possibilities of the raw material, to the re-establishment of older types of structure and their evolutions, and new and *sane* principles; they will produce buildings which will stand, long after the steel frame has gone to the junk heap, and which will be the wonder of ages yet unborn, because of their inherent scientific principles, permanency and adaptability to modern requirements. And herein it seems to us lies the success, profit and future of the burnt clay interests.

For instance, we have in mind a system of vault construction quite feasible to produce in terra-cotta, adaptable to single spans, varying from small to large areas, and for any class of building with a considerable reduction in stock, weight, labor and cost, and which would be quite an advance in *fireproof* construction.

(*b*) *The concrete systems*, good, bad and indifferent, the bad predominating to a large extent. Concrete is in some respects one of the best materials that man has produced, but it has its limitations, especially for large spans, and unless manipulated with the greatest care is untrustworthy, especially so when cost enters so much into competition as it does in the prevailing hustle "to get the job."

(*c*) *The Guastavino system.* In this the principles of structure are thoroughly logical, scientific, unlimited in scope, rightly economical in application of means to ends.

The economic science of *fireproof* building depends upon six elements of primal importance: (1) resistance to fire, (2) strength, (3) lightness, (4) cohesiveness, (5) adaptability, (6) low cost. If we have 2, 3, 4, 5, we will have 6.

Low cost is not confined to product solely, for it is so correlated to other and combined elements of structure that it has its effect on the cost of other structural elements from the roof down. For instance, a type of floor construction may be selected the cost of which per square foot is less than that of other types, yet the design and weight of it may require such increase in the carrying and supporting members of construction as to considerably more than offset the difference in cost of several other types of floors.

If we can gain ten per cent in coefficient of strength and ten per cent less in dead weight of material, we save something like twelve and one-half per cent in the cost of the material in place and a corresponding saving in other parts. This is quite an appreciable factor in net per cent income in these days of close figuring and conservative dividends, when an additional one-eighth of one per cent is not to be ignored.

In burnt clay products we have, unquestionably, fireproof materials, and with proper selections of raw material and scientific manipulation it is quite possible to produce finished products of ultimate strength and lightness; the gain in strength and weight is a gain in cost.

One of the most important essentials requisite in the general run of terra-cotta systems is the *cohesive* principle as a basic element of *homogeneity*, for in respect to floors especially the systems are, as now employed, limited to relatively short spans and dependent on I beam construction. This element of *cohesion* as a factor of strength, self-sustaining quality, and its bearing upon the cost of other elements of structure should be taken account of and allied with resistance to compression. With such an alliance we will gain in adaptability of material, in logical and intelligent design, larger functions and the elimination of other and needless materials and members inherent in present systems, which are the reverse of scientific, of questionable expediency and costly in production.

Aside from the question, as to whether or not a ten or twenty story building is the best dividend payer, according to its life, there is the more important question of permanency as to investment; the ultimate value of a fireproof building is, not only that it shall be *fireproof*, but that it shall be permanent as well. A building may stand for twenty-five years without damage by fire — there are many such — and while the fireproofing encasement, if rightly designed and properly installed, may prevent fire damage to a steel frame, such encasement will not prevent or eliminate the deterioration of the steel by rust.

The average steel-frame building, as erected nowadays, will pass the safety limit of stability inside of twenty-five years, in all probability eighteen to twenty years is the limit, unless considerably more costly and efficient means of protection are devised than those in practice at the present time.

If the life of a fireproof building can be increased to fifty or one hundred years by the adoption of more intelligent principles of construction, the investment will be more sure and profitable.

For instance, let us take the case of an office building costing $600,000. If the life of the steel frame building be twenty-five years, it will have cost at the end of twenty-five years (at four per cent compound interest) $1,599,000; and supposing that another building, to replace the first one, can be built for a like sum (*i. e.*,

$600,000), the investment for buildings, at the end of fifty years (at four per cent compound interest) will foot up to a total of $5,860,335. Now, supposing, instead of a steel frame structure, we erect the same office building in solid masonry construction, using and adjusting burnt clay products to their best advantage, which will last fifty years, and this is quite feasible, and supposing that at the end of twenty-five years the interior of the building is refinished and new mechanical plants installed (allowing forty per cent of cost for such refinishing and installation), we shall then have the building good for another twenty-five years of life; and at the end of fifty years the total investment foots up to (with four per cent compound interest) $4,900,935, or a saving of $959,400.

It certainly cannot be claimed that it is a wise expenditure of money to erect buildings the life of which cannot be depended upon in excess of from eighteen to twenty-five years. We maintain that so far as the construction and architectural design of such a building are concerned, that it can be designed so as to be just as available for business purposes at the end of fifty years as at the end of twenty-five years; the prolonged life of such a building depends upon the *construction;* consequently it is of imperative importance that more intelligent, progressive and scientific principles of construction should come to be adopted; and to this end the producers of burnt clay products should bend their energies to the broadening of their field and a very much larger output.

It is quite within practical limits for bricks to be made that will sustain loads of from sixty to one hundred per cent greater than allowed at present, and for terra-cotta arches to be designed and made which will be twenty to thirty per cent lighter in weight and carry more load than those in use to-day, with the resultant gain in elimination of useless and needless material, and a considerable gain in cost of individual buildings, which will be to the advantage of architects, producers and builders, in the more general erection of better buildings and more of them.

A FIREPROOF HOTEL.

AN interesting occurrence was related to us and vouched for as having happened in one of the largest of the Boston hotels. One morning some time since the chambermaid on one of the upper floors having occasion to enter a room which had been vacant for two days discovered, to her amazement, that the interior finish and the contents of the room had been entirely consumed by fire. The conflagration had started unknown to any one, had spread, slowly but surely, until everything combustible within reach was ablaze and had then quietly burned itself out without giving any indication to any one that there was any trouble. The room was so situated that the smoke found its way out through the window opening rather than through the doors, and when the room was entered by the maid the fire was not only dead out but the embers were cold. While this incident does not reflect very favorably upon the supervision maintained in this hotel, it certainly speaks volumes for the merit of the construction.

Selected Miscellany.

NEW YORK NOTES.

We regret to have to chronicle the death of Mr. Hugh Lamb. Mr. Lamb was for many years associated in partnership with Mr. Charles A. Rich in the firm of Lamb & Rich, which had a large and lucrative practice,

PANEL BY HERTS & TALLANT, ARCHITECTS.
Perth Amboy Terra-Cotta Company, Makers.

consisting mostly of residence work, both city and country, although they built some important large buildings, among them being the Barnard College buildings in this city.

DETAIL, EXECUTED BY ST. LOUIS TERRA-COTTA COMPANY.

The American News Company has purchased a large piece of property on Park Place, extending through to Murray Street, upon which they intend to erect a large

DETAIL BY VICTOR HUGO KOEHLER, ARCHITECT.
New Jersey Terra-Cotta Company, Makers.

ENTRANCE TO DORMITORY FOR CINCINNATI COLLEGE OF MUSIC.
Gustave W. Drach, Architect.
Terra-Cotta furnished by Indianapolis Terra-Cotta Company.

MASONIC TEMPLE, NEW ROCHELLE, N. Y.
George K. Thompson, Architect.
Terra-Cotta furnished by New York Architectural Terra-Cotta Company.

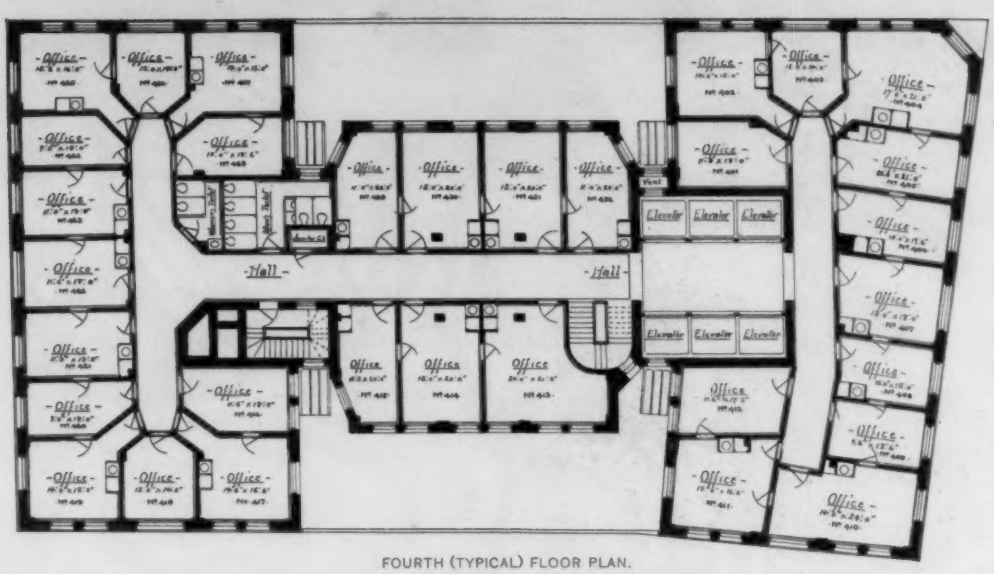
business building, but no architect has been selected as yet. The price paid for the land was $600,000.

Mr. J. Pierpont Morgan has bought the Wm. E. Dodge residence adjoining his own on Madison Avenue. He now owns one-quarter of the block bounded by Madison and Park avenues, 36th and 37th streets.

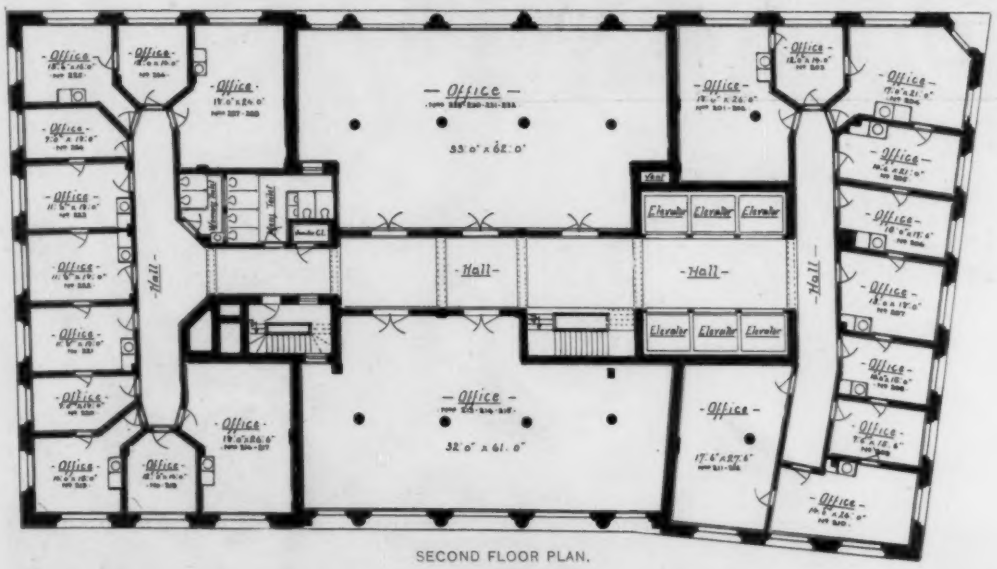
A month ago plans for a $300,000 marble library building were drawn up for Mr. Morgan by McKim, Mead & White. This structure is to be T shaped ; 115 feet on 36th Street and 73 feet deep. It is rumored that he will erect a handsome residence adjacent to and in harmony with this library.

Columbia College is to have a new dormitory building to cost $250,000, which it is proposed to have ready for occupancy by October 1. The plans will be drawn by McKim, Mead & White, who planned all the other college buildings. There will be two hundred rooms. Some apartments will be in suites consisting of a bedroom and study, and in many instances of two and three rooms and a study. The name of the dormitory will be

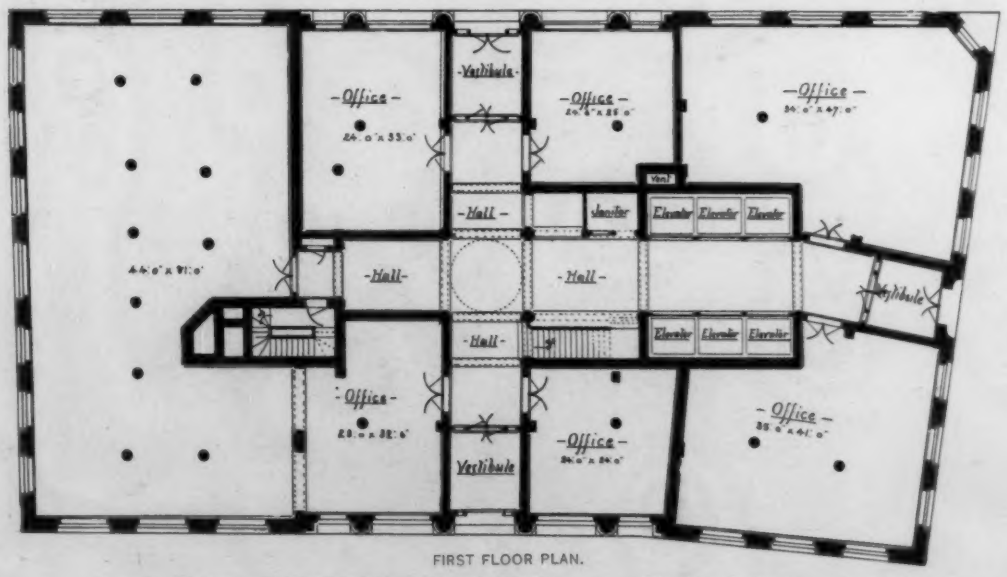
OFFICES FOR GLUECK BREWING COMPANY, MINNEAPOLIS, MINN.
Boehme & Cordella, Architects.
Entire front of Terra-Cotta. Winkle Terra-Cotta Company, Makers.



FOURTH (TYPICAL) FLOOR PLAN.



SECOND FLOOR PLAN.



FIRST FLOOR PLAN.

PLANS, BOARD OF TRADE BUILDING, BOSTON. Winslow & Bigelow, Architects.

Knowlton Hall, in memory of General Knowlton, an officer in the Continental army which engaged in the battle of Harlem Heights on the site of the proposed building.

Tiffany & Company, one of the largest jewelry establishments in the world, is soon to move from Union Square, where they have been for many years. They have bought a lot on 5th Avenue between 36th and 37th streets, 160 feet front and 150 feet deep. The price paid for the property was $2,000,000. They will build at once. The plans of the building have not been completed finally, but they provide for a structure which will be architecturally an ornament to this conspicuous site.

William B. Tubby & Brother are planning a fourteen story building to be erected for the "Town Topics" Company on 38th Street, near 8th Avenue.

PARK STREET CHURCH.

IN our last issue reference was made to the possible disappearance of Park Street Church. Since then it has transpired that the real estate operators, who were reported as having purchased the property, had acquired only an option, and the option having expired on the 1st of April, the whole deal was declared off and the present prospects are that the church will continue for an indefinite period to adorn the corner of Park and Tremont streets. Every one who has the beauty of the city at heart will rejoice that the church is to

BANK AND INSURANCE BUILDING, DUBUQUE, IOWA.
W. W. Boyington & Co., Architects.
Terra-Cotta by the Northwestern Terra-Cotta Company.

remain. There are so few monuments of that sort that we cannot afford to lose any of them. The church society is the gainer by a forfeit of twenty-five thousand dollars, but is also immeasurably more the gainer by reason of the spontaneous expression of public opinion which has called so loudly and unmistakably for the preservation of this monument, and it is hoped that not only may the church remain substantially in its present condition, but that the congregation, though widely dispersed as to residence, may continue to be identified with the edifice. In these days of rapid transit and numerous trolley lines, it really makes comparatively little difference how far one goes to church.

The cause publicly announced as having led to the failure of this real estate operation was the disturbed condition of the money market, which made investors very shy. During the past fifteen years buildings in Boston have been almost without exception erected and operated by syndicates or trusts, and even the large real estate holding estates have been disposed to prefer shares in a trust to entire ownership of one property. Consequently the promoters of this enterprise did not expect to furnish all the means themselves, but counted upon the support of the investing public. But in addition to the poor money market the public sentiment against the disappearance of the church was undoubtedly a deterrent factor, beside which a bill was pending in the legislature looking toward the appropriating of the property for public domain, and investors would naturally fear that a purchase of shares in such a trust might mean buying into a lawsuit; and though a considerable portion of the money needed was actually subscribed, the public as a whole failed to respond.

The failure of the Park Street Church syndicate raises the query as to the prospect of the future in real estate. This country has passed through several successive years of exceptionally high prices and easy markets. The prices of labor have been steadily increasing, and nearly all materials have advanced from ten to fifty or sixty per cent. It is inevitable that a reaction must ensue, and the indications point, in our judgment, to a beginning of hard times in the real estate market. This means fewer buildings, less work for contractors and less labor employed generally. There is no one industry which affects so large and varied a class of individuals as building. We do not believe the country will ever see hard times in the sense that such occurred years ago. The wealth acquired during the past generation is in so tangible a form, investments as a whole are on such solid bases, that it would be extremely difficult to materially upset the fabric of our real estate investment market. But the effect of slackness in the real estate market will be to greatly reduce the cost of building, which will be, in many respects, an advantage, and will tend to restrain excess in building operations, which restraint surely is not to be deplored.

ENTRANCE, ST. CHARLES BORROMEO CHURCH, NEW YORK CITY.
George H. Streeton, Architect.
Terra-Cotta executed by Excelsior Terra-Cotta Company.

DETAIL BY BENJAMIN FRENCH, ARCHITECT.
Standard Terra-Cotta Works, Makers.

IN GENERAL.

The school commissioners of Boston through their chairman, Mr. R. Clipston Sturgis, offer a prize to the members of the Boston Architectural Club, in competition for the best design for a door handle to be used in the public schools of Boston.

The design is to include the escutcheon plate and the knob ; the knob to be about 2½ inches diameter.

The competitor is free to choose at to style, finish or

HOUSE AT BUFFALO, MONOLITH CONSTRUCTION.
BUILT IN 1870.
Akron Star Brand Cement used; after thirty-three years, shows no Check or Break.

material, the only suggestion offered being the possibility of utilizing some local insignia or letters as he may select.

A prize of $15.00 will be awarded the design placed first if of sufficient merit, and first and second mentions will be made for the two designs placed next in the award.

Mr. C. Howard Walker is to judge of the designs and award the prize and mentions.

The Rhode Island Chapter of the American Institute of Architects held an exhibition of architectural drawings at the Rhode Island School of Design, which closed March 28. In collecting these drawings an attempt was made to illustrate, as far as possible, the progress of a building through the architect's office, and in following out this idea many very effective series of drawings were presented. The exhibits, therefore, were not limited to perspective and show drawings, but included preliminary sketches, pencil drawings, water colors, pen and inks, working drawings, scale details, blue prints and photographs of finished work. The exhibition was further varied by a few academic drawings by members of the Chapter and an exhibit of photographs of the masterly rendered drawings by Brune and other French draughtsmen copied from the collection of the Massachusetts In-

ROOM IN STABLE OF CLARENCE MACKAY, ESQ., SHOWING GUASTAVINO SMOOTH BUFF TILE CEILING.

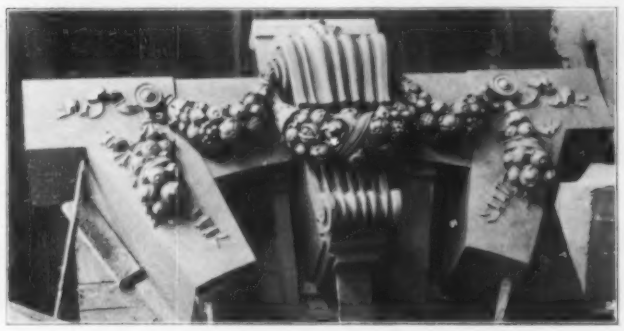
stitute of Technology. Nineteen Chapter members entered their drawings.

The work of the American School of Correspondence connected with the Armour Institute at Chicago, while starting with the fundamental studies of a general education, carry the student far along into the most exact scientific studies. The instruction papers on heating and ventilation are not only such as to present a comprehensive survey of the whole science to the student, but

AMERICAN EXPRESS COMPANY BUILDING, NEW YORK CITY, SHOWING USE OF KREISCHER BRICK.

they are also so essentially practical in their details and their presentation that they can be easily made of considerable value to the architect and the engineer for use in daily practice. This is only one of the many courses which this most excellenl school places within the reach of young men with limited means and large ambitions.

Front bricks, manufactured by the Columbus Brick and Terra-Cotta Company, will be used in the following new buildings: The Powers Building, Chicago, light gray brick; the McKinley High School, Chicago, W. B. Mundie, architect, light and dark gray brick (this will be



DETAIL BY HEINS & LA FARGE, ARCHITECTS.
Atlantic Terra-Cotta Company, Makers.

one of the finest school buildings in the world); Frisco Building, St. Louis, Eames & Young, architects, gray speckled brick; Chapter House, Cornell University, George R. Dean, architect, light gray Roman brick laid with one-inch mortar joints; residence and stable for F. T. F. Lovejoy, Esq., Wilkinsburg, Pa., Alden & Harlow, architects, dark gray Norman brick (this is to be one of the finest residences of the middle west); Y. M. C. A. Building, Columbus, Ga., T. W. Smith & Co., architects, light gray brick; First National Bank Building, Birmingham, Ala., dark buff brick; large factory building for the

INTERIOR OF STABLE, SHOWING USE OF TIFFANY ENAMELED BRICK.
F. W. Perkins, Architect.

National Cash Register Company, Dayton, Ohio, Frank M. Andrews, architect, light buff brick; Engineering Building, Ohio State University, light gray brick.

At the annual meeting of the Celadon Roofing Tile Company, held April 7, the following officers were elected: William R. Clarke, New York, President; C. Layton Ford, Plainfield, N. J., First Vice-President; Henry S. Harris, Chicago, Second Vice-President; E. S. Marvin, New York, Treasurer; Eugenia L. Babcock, Plainfield, N. J., Secretary; Alvord B. Clarke, Ottawa, Ill., General Superintendent.

DETAIL BY PAUL J. PELZ, ARCHITECT.
Conkling-Armstrong Terra-Cotta Company, Makers.

A. A. Crowell, architect, has opened an office at Enid, Okla., and would be glad to receive manufacturers' catalogues and samples.

JOHN MACKAY & CO'Y, OF THE CANADIAN BANK OF COMMERCE BUILDING, TORONTO, CANADA, WOULD LIKE TO BE PLACED IN COMMUNICATION WITH A FIRM OF ARCHITECTS OF THE HIGHEST PROFESSIONAL STANDING, AND OF SPECIAL EXPERIENCE IN THE ERECTION OF MODERN BAKERIES. COMMUNICATIONS WILL BE HELD IN THE STRICTEST CONFIDENCE.

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ARMOUR INSTITUTE OF TECHNOLOGY
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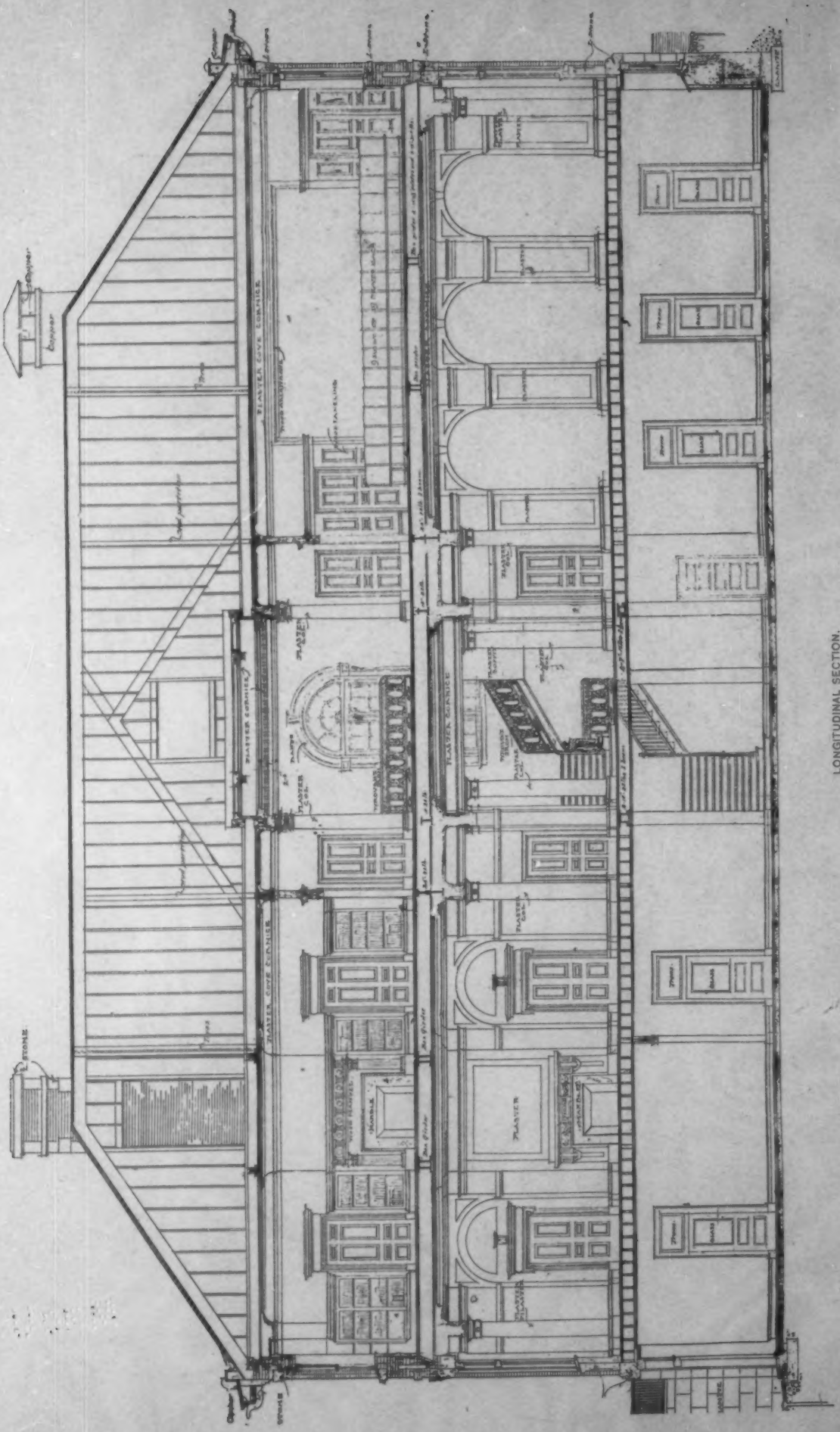


LONGITUDINAL SECTION.

BUILDING FOR DEPARTMENT OF ARCHÆOLOGY, PHILLIPS ACADEMY, ANDOVER, MASS.

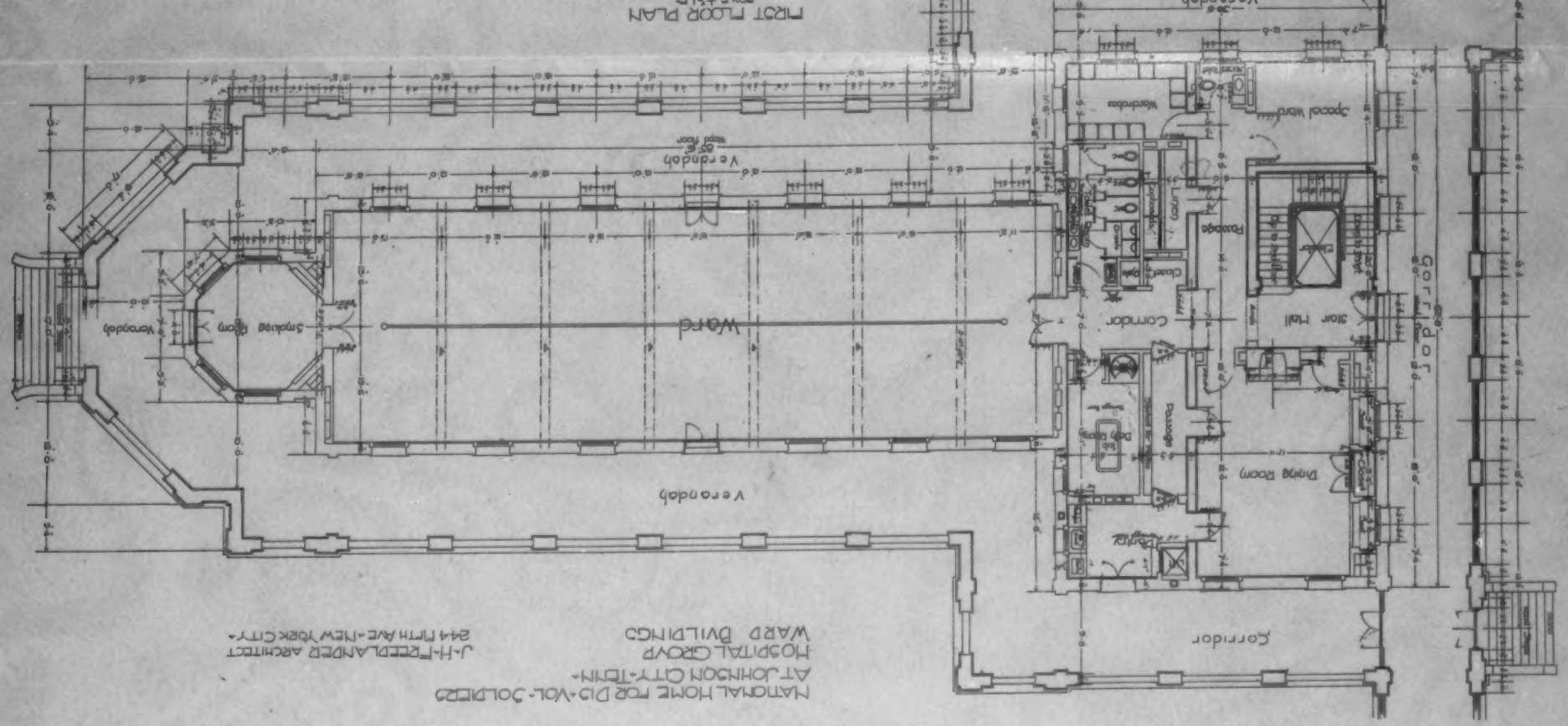
GUY LOWELL, ARCHITECT.

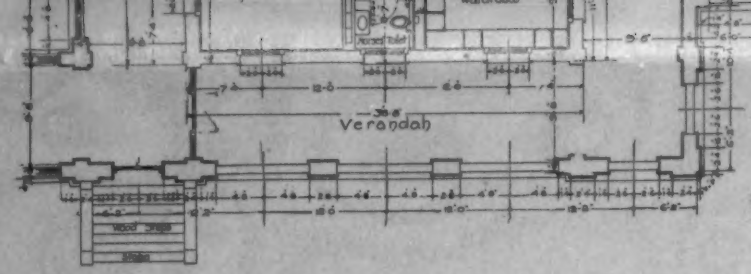
Copy

NATIONAL HOME FOR DISABLED VOLUNTEERS
AT JOHNSON CITY, TENN.
HOSPITAL GROUP
WARD BUILDINGS

J. H. FREEPLANDER ARCHITECT
244 FIFTH AVE. NEW YORK CITY.

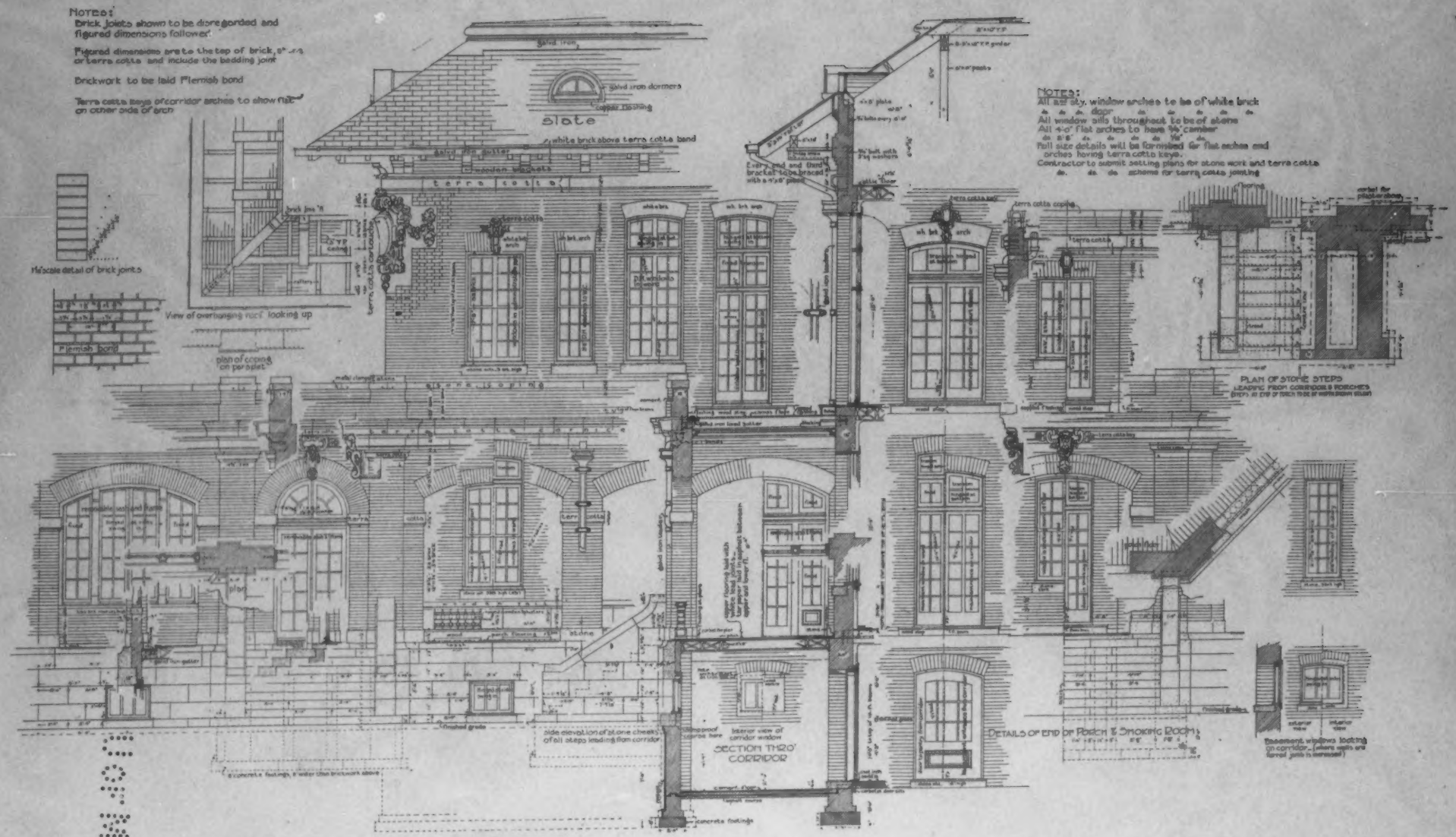
FIRST FLOOR PLAN


Ward
Corridor
Corridor
Verandah
Verandah
Smoking Room
Vestibule
Clerk
Passage
Dining Room
Kitchen
Special ward
Wardrobe
Stair Hall
Elevator
Passage
Linen
Closet
Bath Room
Bath Room
Bath Room



33

FIRST FLOOR PLAN
SCALE 1/8 IN.
DRAWING No. 14

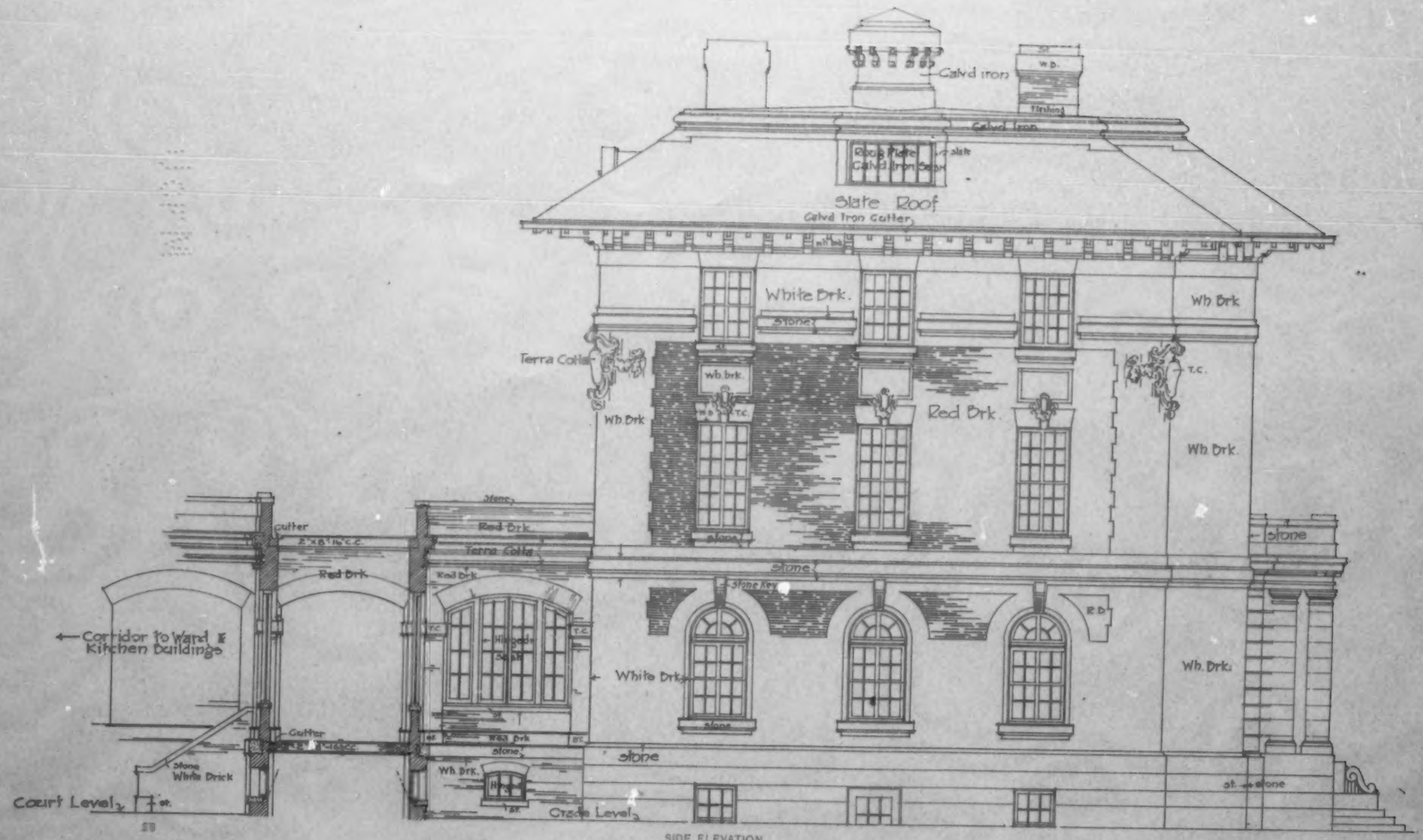

Notes:
Brick joists shown to be disregarded and figured dimensions followed.
Figured dimensions are to the top of brick, stone or terra cotta and include the bedding joint
Brickwork to be laid Flemish bond
Terra cotta keys of corridor arches to show flat on other side of arch
Slate
white brick above terra cotta band
terra cotta
Flemish bond
plan of coping on parapet
View of overhanging roof looking up
SECTION THRO' CORRIDOR
Interior view of corridor window
DETAILS OF END OF PORCH & SMOKING ROOM
PLAN OF STONE STEPS
Notes:
All segl. window arches to be of white brick
All window sills throughout to be of stone
All 4'-0" flat arches to have ½" camber
Full size details will be furnished for flat arches and arches having terra cotta keys.
Contractor to submit setting plans for stone work and terra cotta
do. do. do. scheme for terra cotta jointing

32

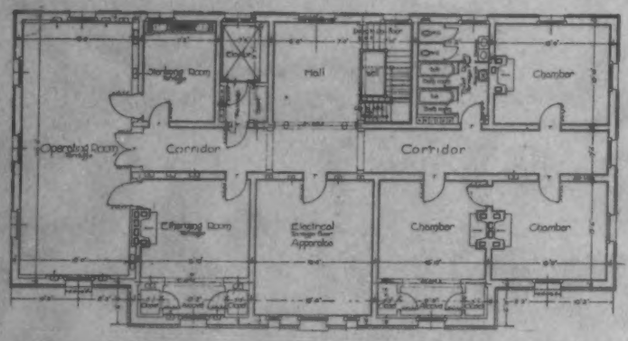
EXTERIOR DETAILS.

WARD BUILDING NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS, JOHNSON CITY, TENN.

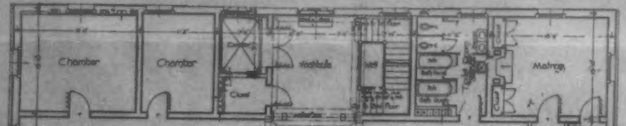
J. H. FREEDLANDER ARCHITECT.

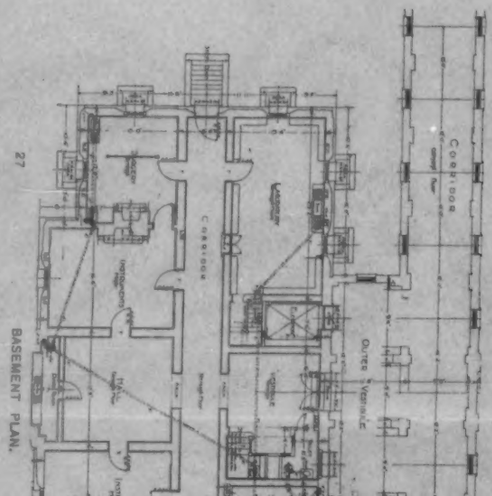


SIDE ELEVATION.

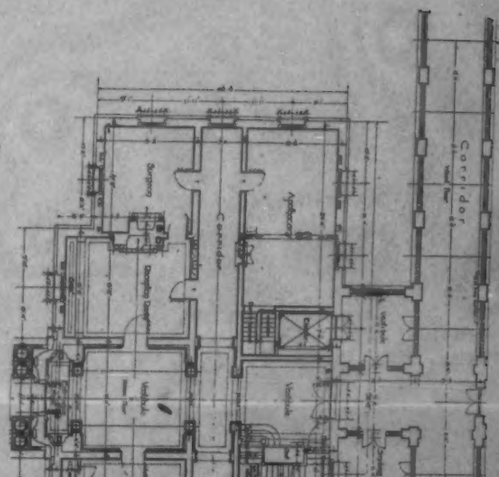


THIRD FLOOR.

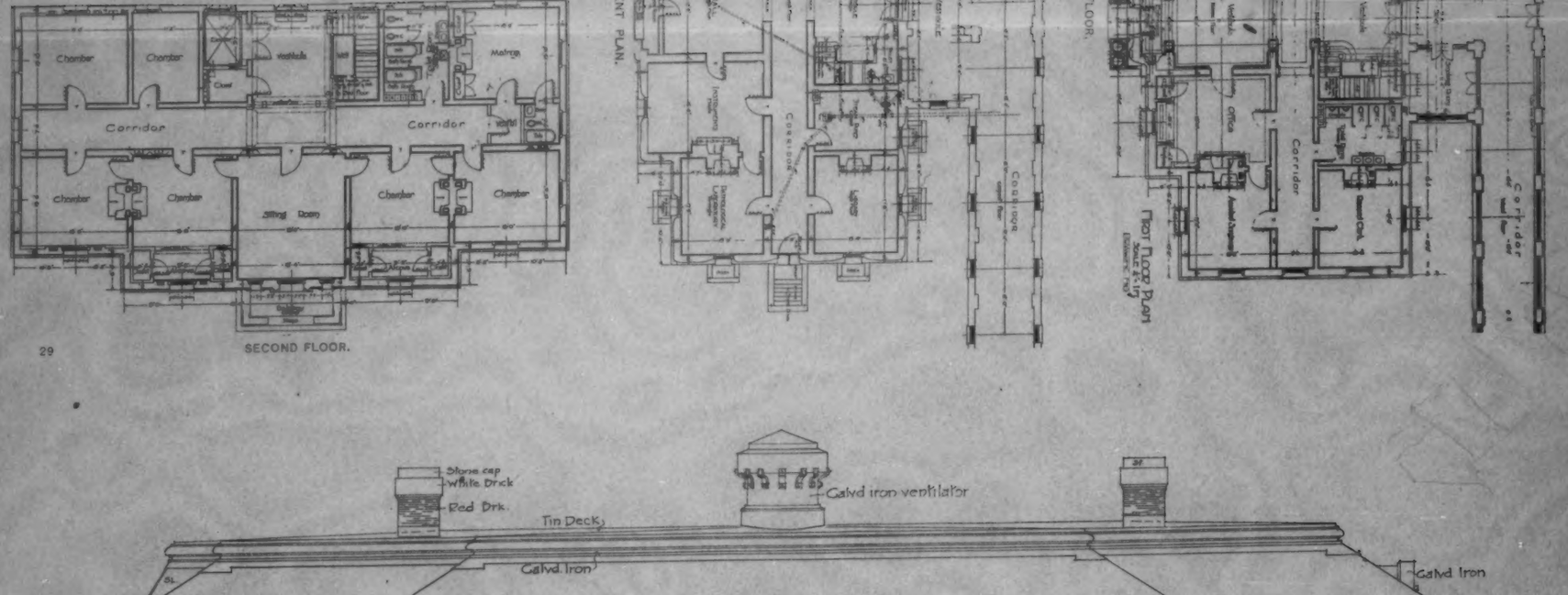




BASEMENT PLAN.



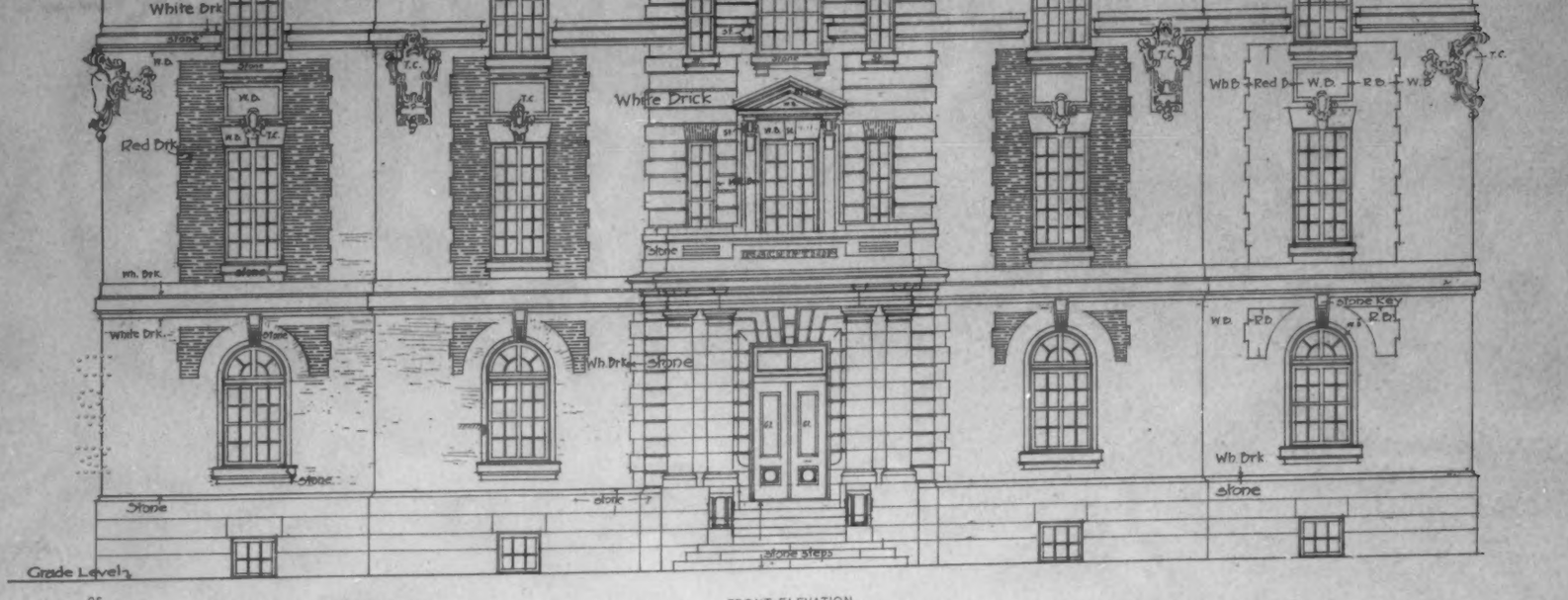
FIRST FLOOR.



29 SECOND FLOOR.

FIRST FLOOR.

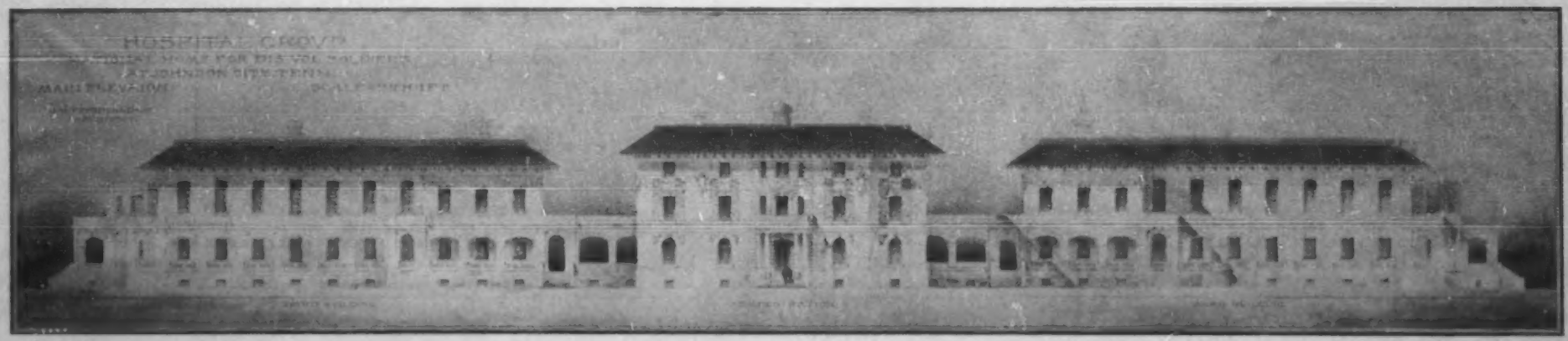
FIRST FLOOR PLAN.

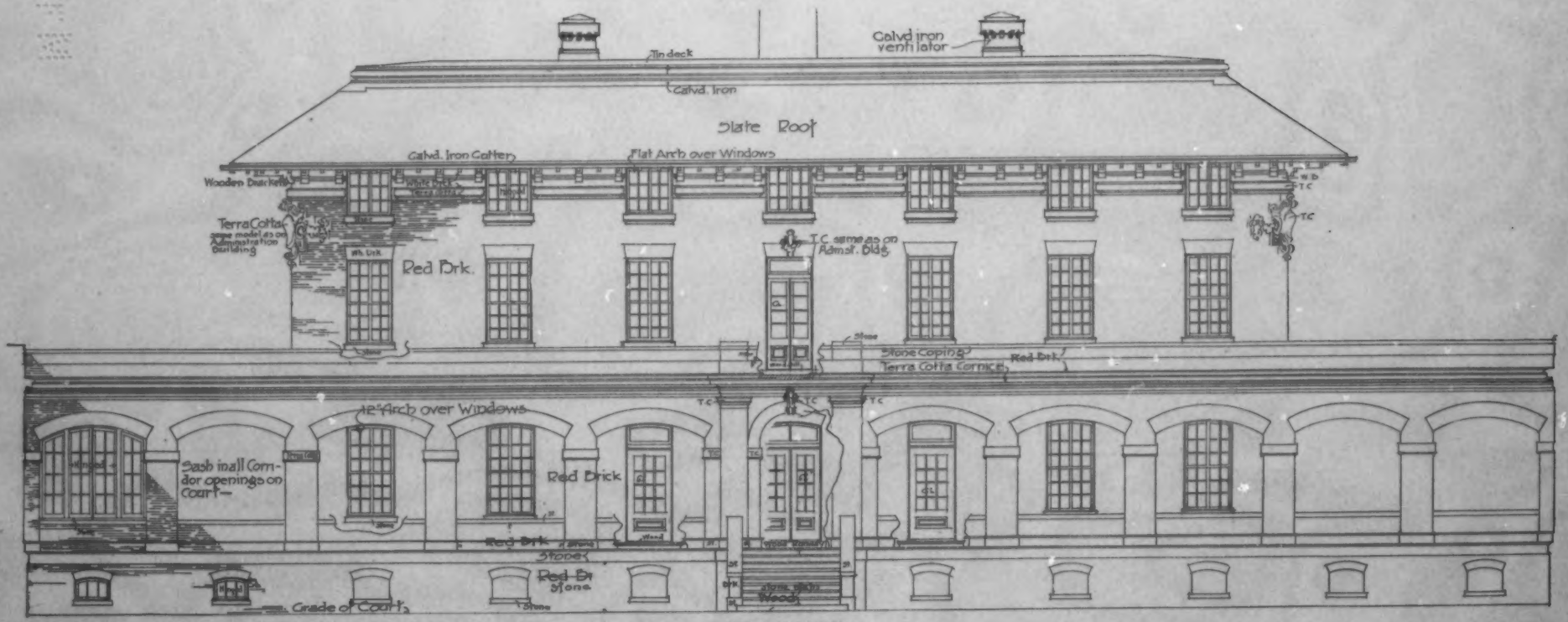


25 FRONT ELEVATION.

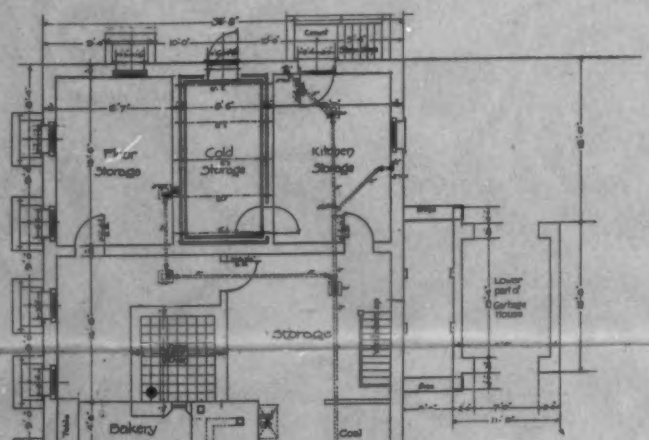
ADMINISTRATION BUILDING, NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS, JOHNSON CITY, TENN.

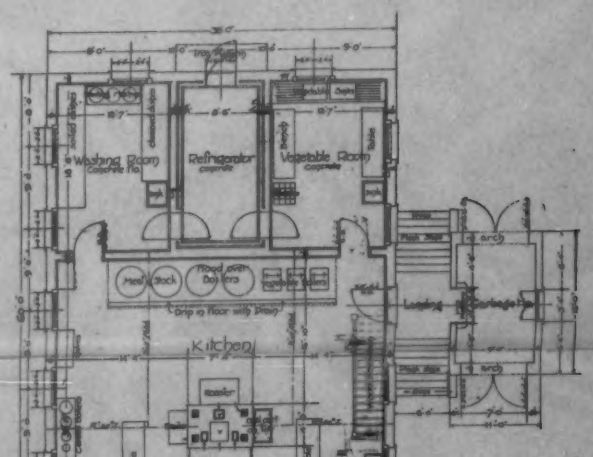
J. H. FREEDLANDER, ARCHITECT.

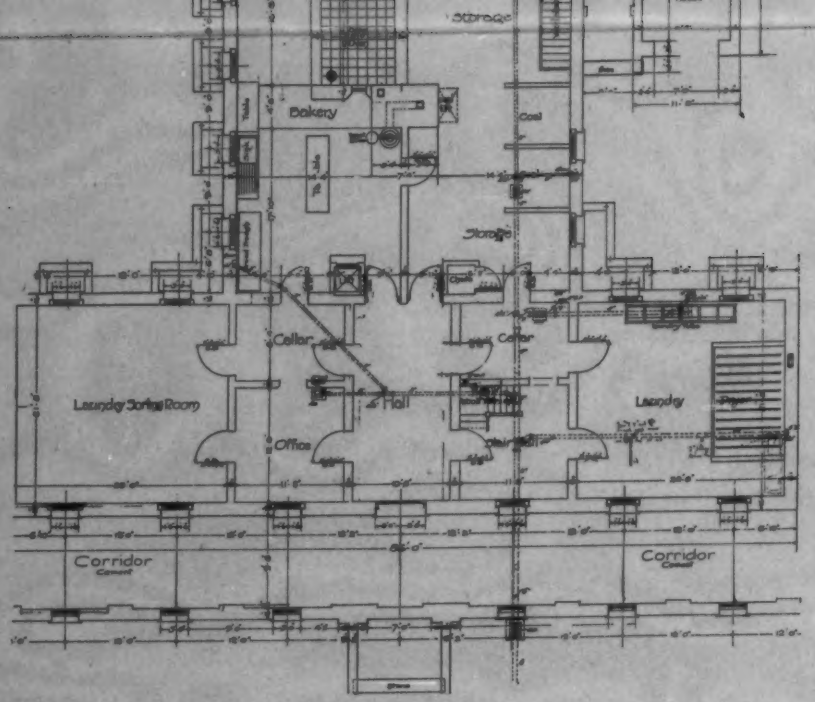




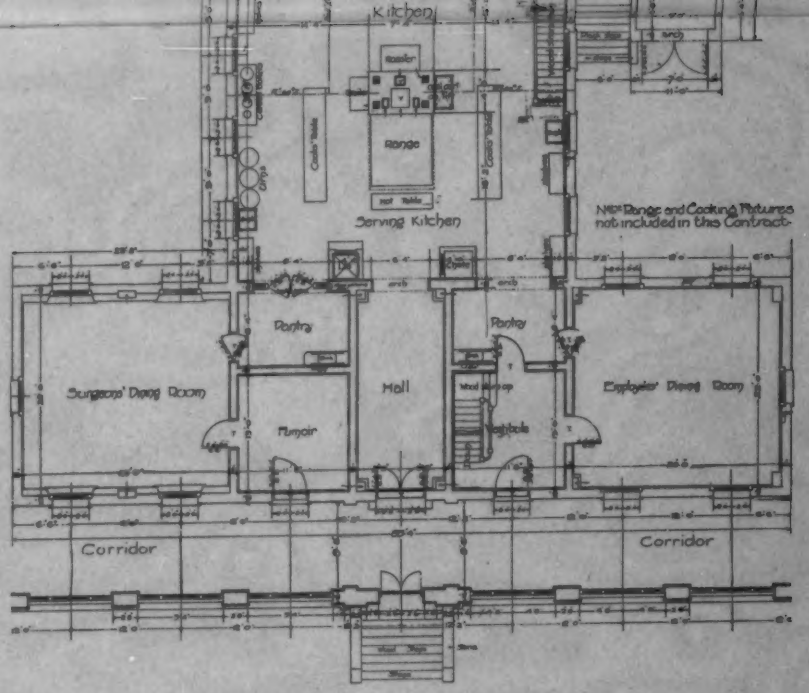
FRONT ELEVATION.



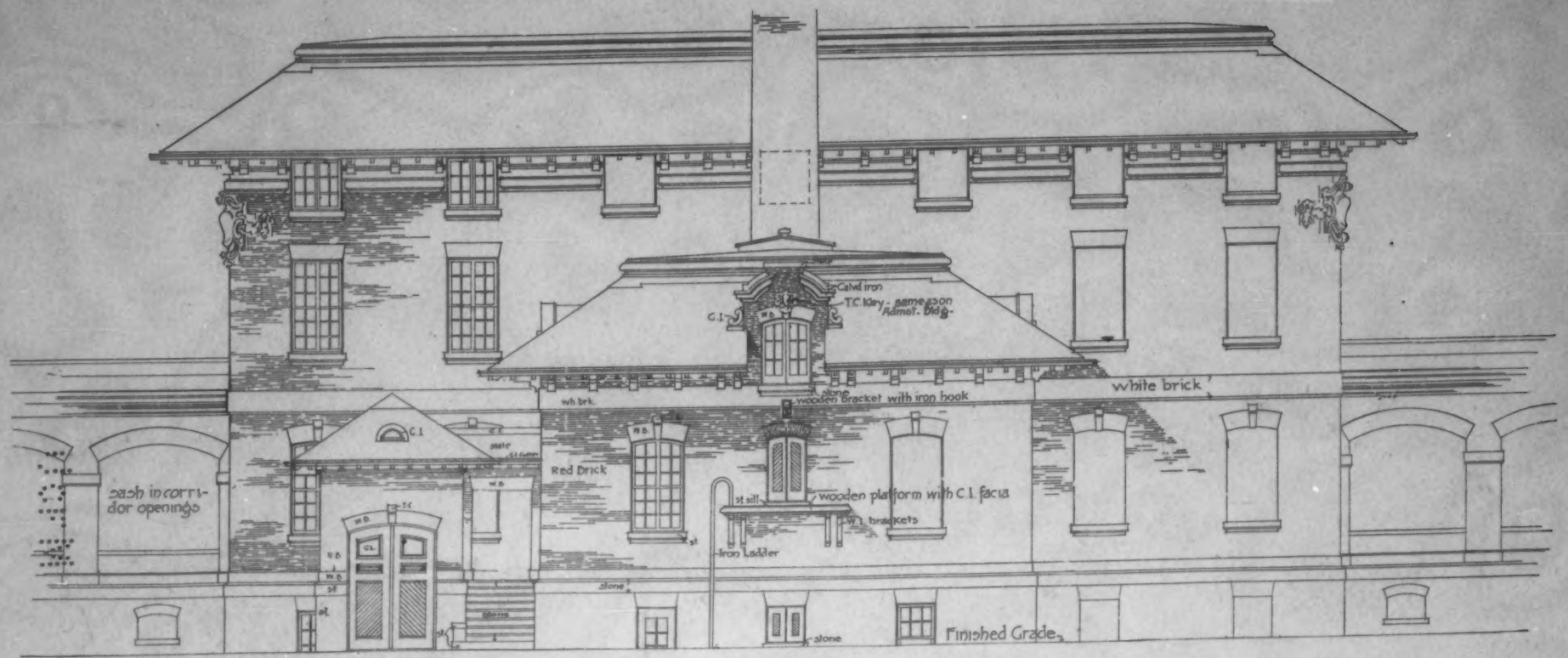




37 BASEMENT PLAN.



36 FIRST FLOOR PLAN.

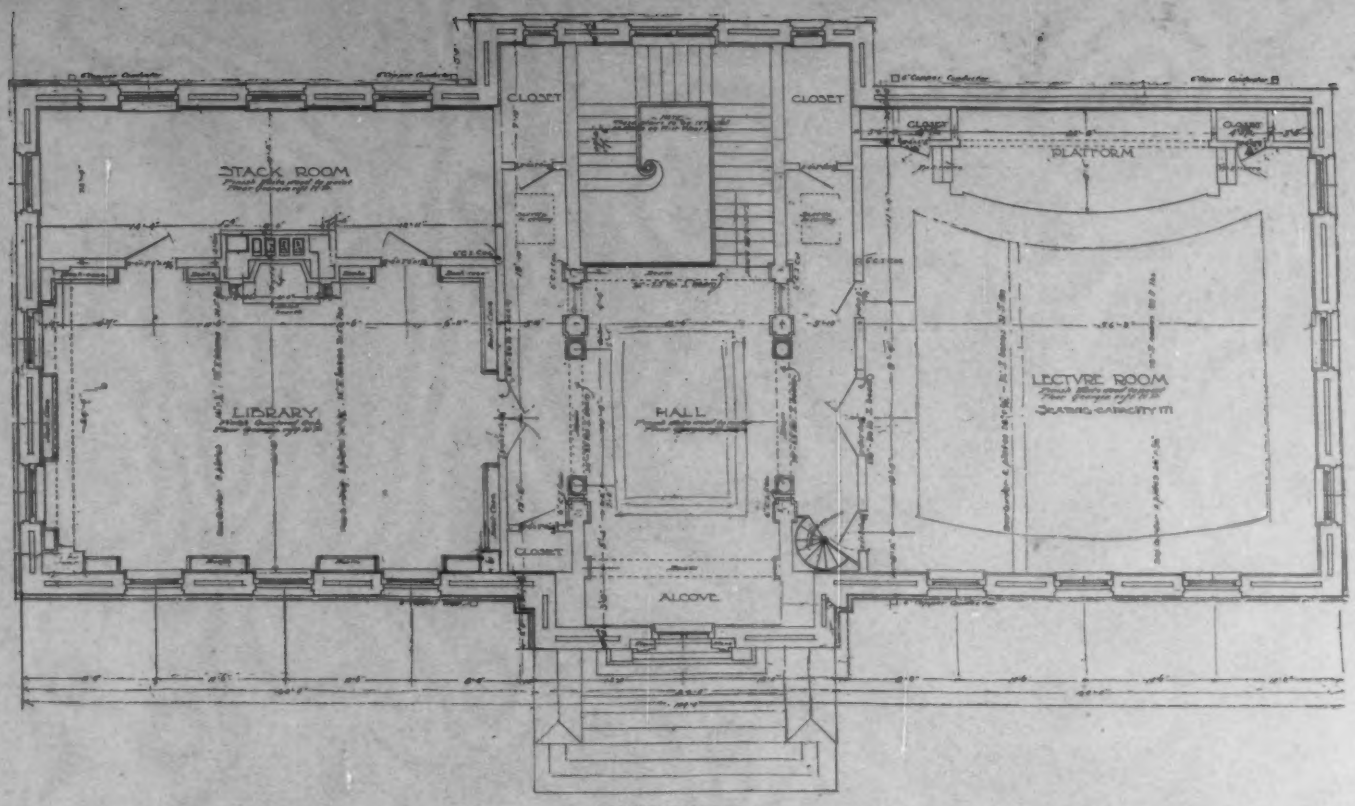


REAR ELEVATION.

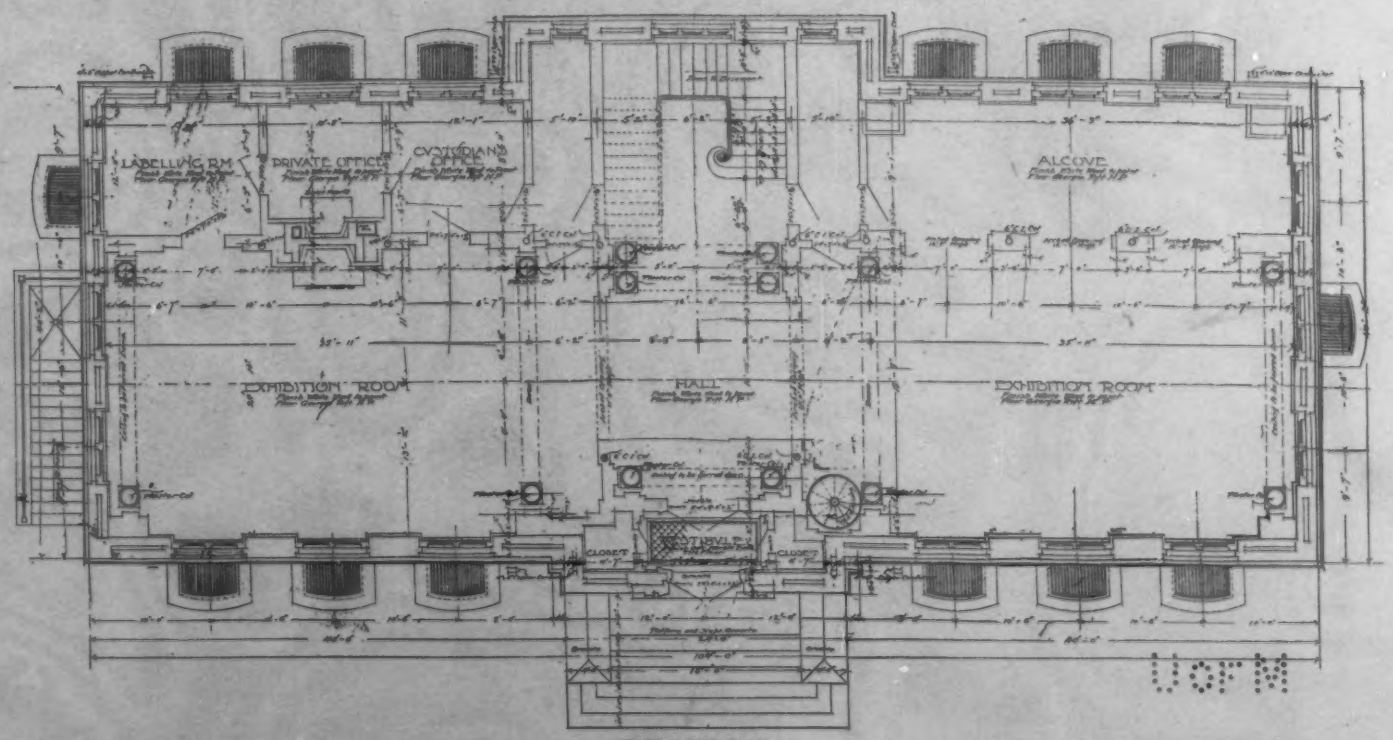
KITCHEN BUILDING, NATIONAL HOME FOR DISABLED VOLUNTEER SOLDIERS, JOHNSON CITY, TENN.

J. H. FREEDLANDER, ARCHITECT.

MTSU



SECOND FLOOR PLAN.



FIRST FLOOR PLAN.

PLANS, BUILDING FOR DEPARTMENT OF ARCHÆOLOGY, PHILLIPS ACADEMY, ANDOVER, MASS.

GUY LOWELL, ARCHITECT.

ПОЬИ

HOTEL TOURAINE, BOSTON, MASS.

WINSLOW & WETHERELL, ARCHITECTS.

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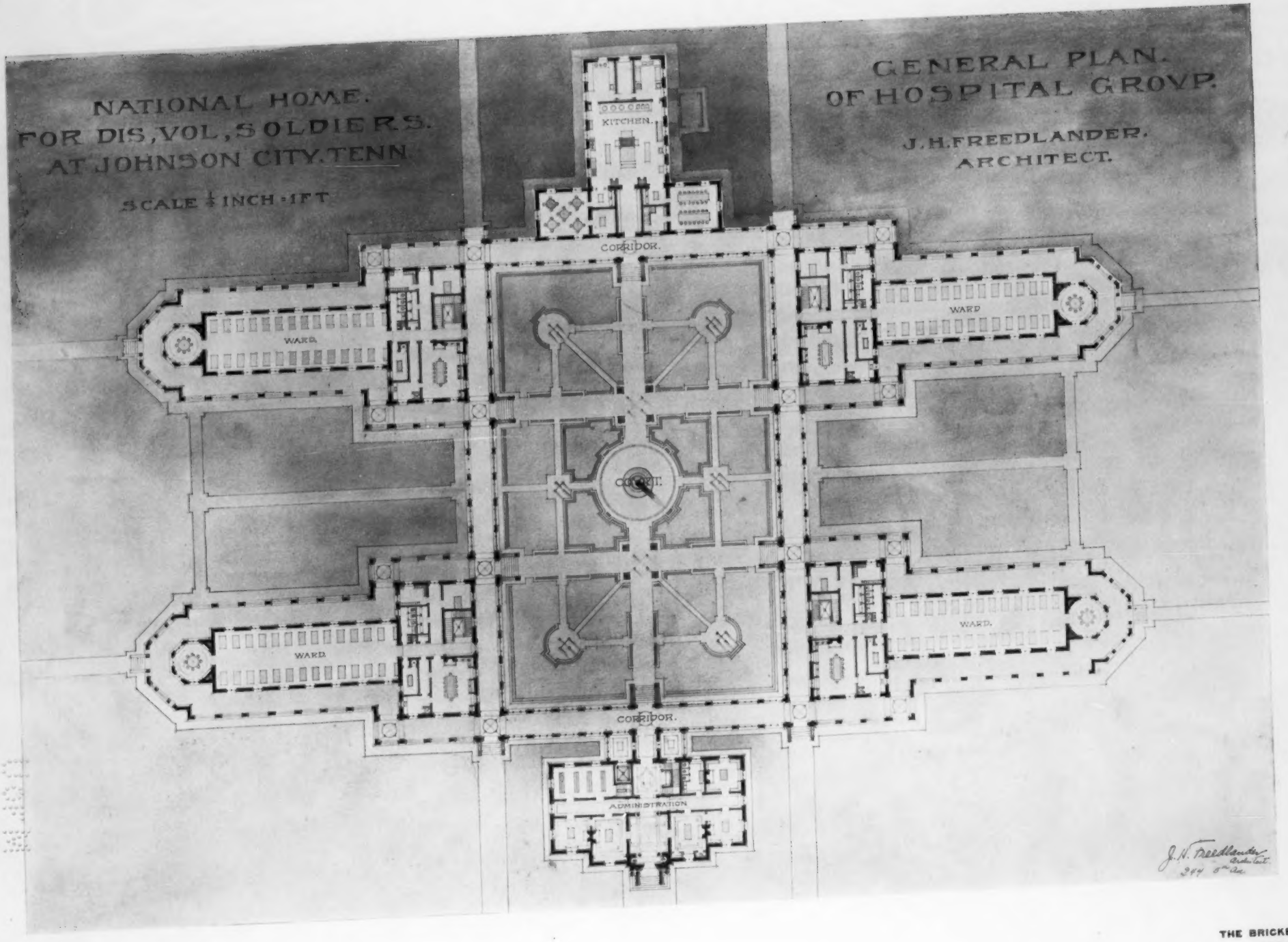
NATIONAL HOME.
FOR DIS, VOL, SOLDIERS.
AT JOHNSON CITY. TENN
SCALE ¼ INCH = 1 FT
GENERAL PLAN.
OF HOSPITAL GROUP.
J. H. FREEDLANDER.
ARCHITECT.
KITCHEN.
CORRIDOR.
WARD.
WARD.
COURT.
WARD.
WARD.
CORRIDOR.
ADMINISTRATION.
J. H. Freedlander
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GUY LOWELL, ARCHITECT.

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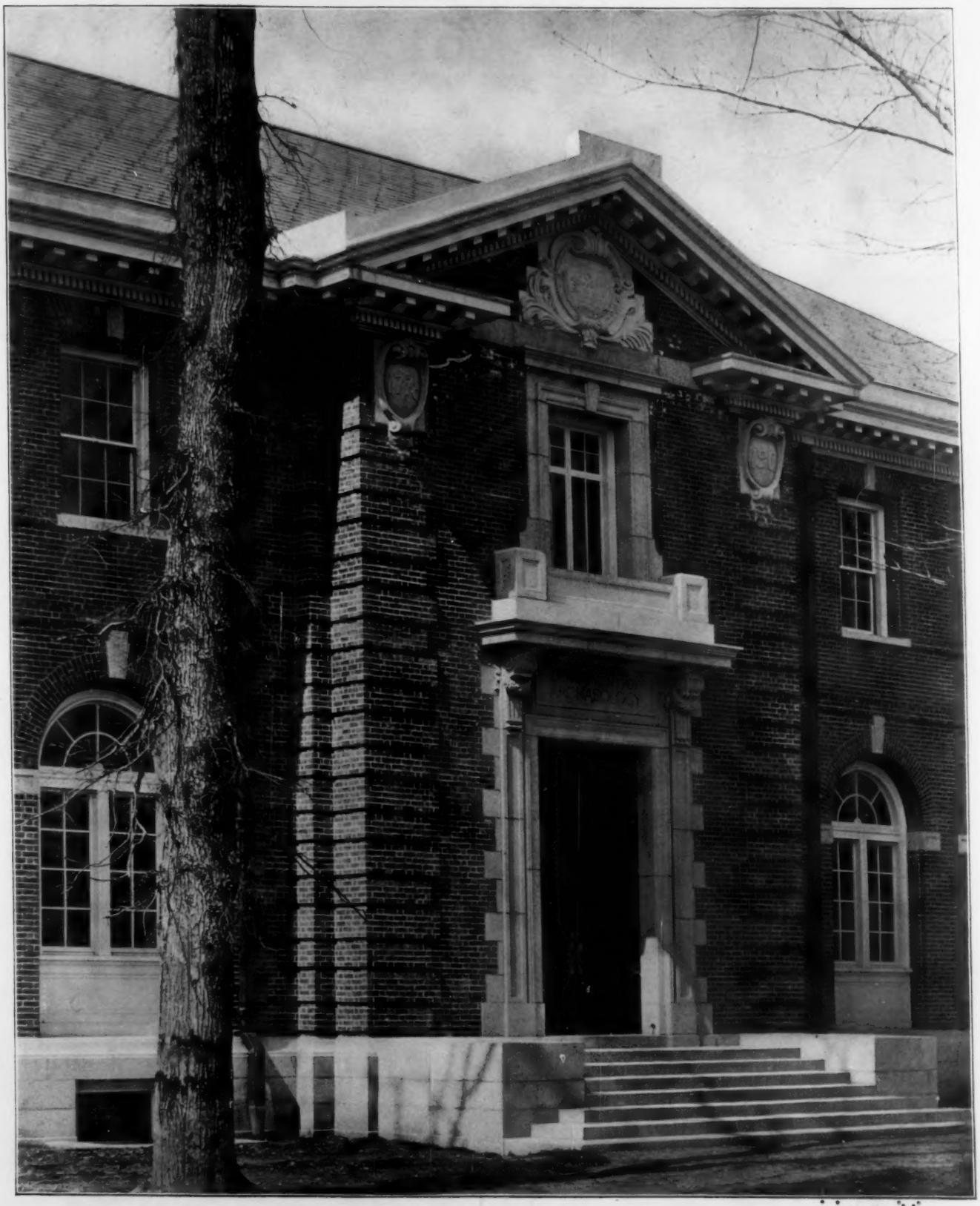

DETAIL OF MAIN ENTRANCE.

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GUY LOWELL, ARCHITECT.

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